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A TREATISE

ON THE

BOTANIC THEORY AND PRACTICE OF MEDICINE,

COMPILED

FROM VARIOUS SOURCES,

WITH

REVISIONS AND ADDITIONS.

~~~~~  
BY A. N. WORTHY, M. D.,

PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE IN THE  
SOUTHERN BOTANICO-MEDICAL COLLEGE.

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TO WHICH IS ADDED,

A GLOSSARY.

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STATE OF GEORGIA, *to wit*:

BE IT REMEMBERED, That on the 22d day of January, A. D., 1842, ALFRED N. WORTHY and HENRY LEE, of the said District, have deposited in this office the title of a Book, the title of which is in the words following: "A Treatise on the Botanic Theory and Practice of Medicine, compiled from various sources, with revisions and additions," the right whereof they claim as proprietors in conformity to an act of Congress entitled, "an act to amend the several acts respecting copy rights."

GEO. GLEN.

*Clerk of the District.*



## PREFACE.

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THE Thomsonian system of medical practice is too well known and too highly appreciated throughout our country to require eulogium or panegyric in this place.

It needs not the aid of declamation to foster, substantiate, or enhance its value ; it only claims for itself a fair investigation and trial to be duly esteemed ; for certainly it cannot be denied that if the most violent opposition could have had its intended effect, the system long ago would have been annihilated. The argument in its favor accumulates when we contemplate this fact, and still survey the rigid examination it is every where forced to pass through ; and which perhaps like true friendship has ever to be thoroughly tested, "has ever to undergo and withstand the shocks of adversity before it is justly entitled to the name." Although the world is indebted to Dr. SAMUEL THOMSON for the outlines of the system of practice which is taught in the Southern Botanico-Medical College ; and although abler pens than those employed in the compilation of these volumes, may have been, and still are engaged in maintaining and defending the system ; still the conclusion is not weakened that there exists a necessity for such a work. It is thought a publication of this kind, above all others, is most essential to the student as a text book—to the practitioner as a reference and guide ; nor can it be regarded in any other light, than as promoting the greatest possible good among the botanic fraternity generally. Universal observation proves the fact, that every thing in nature is referable to certain principles of order ; and the application of the general rule cannot be excluded in regard to the inception, development and termination of the various diseases incident to the human system. It must not be understood by the remarks upon this point now under notice, that our confidence is at shaken in those fundamental principles of medical science first taught by THOMSON ; for it is fully believed that this reformed practice so satisfactorily demonstrated in every section of our country at the present time, will only be enhanced, when applied to, or connected with an accurate and faithful delineation of the symptoms and indications of disease, carefully selected from the most approved and critical authors. Let it not be supposed that our exertions in the publication of this work are animated by any other motive than a desire to do good—a desire to promote the welfare of our fellow beings, in the attempt to rescue, perhaps in some instances, suffering humanity from the ordinary fate of falling into the hands of those who possess such a greedy desire of fame as to make them unmindful of the truth that there is more real merit in preventing the necessity of one severe surgical operation, than the dexterous performance of some cunning and skilful exploit, the execution of which is alone profitable to the boasting operator.

In the progress of teaching the branch of theory and practice, our botanic works were found limited in their symptoms and indications of

diseases ; consequently the text books of the old school were obliged to be made use of for that purpose. This was found to be very inconvenient to students, inasmuch, as their treatment is constantly intermixed throughout every description of disease, and the book useless beyond the mere appropriation to such a purpose. Hence this work has been undertaken to supply this consideration.

Circumstances, unavoidable and unforeseen, even since the most of what was intended, as the first volume had been printed, have compelled those interested in the publication of the work, to abandon their original design of two volumes ; and to condense it in every department practicable, consistent with its general utility.

It certainly cannot be supposed, but that many errors would creep into a work of such magnitude, commenced and pushed through the press in the short period of six months, and by those, too, inexperienced in book-making, that a careful and deliberate revision would exclude. But our botanic brethren must judge of our *motives*, rather than a few trilling typographical mistakes.

The author is not ambitious of the fame of originality—he covets the more humble, but perhaps more useful appellation of *diligent and judicious compiler* ; and if it but subserve the purpose for which it is designed, he is contented and satisfied.

THE AUTHOR.

SOUTHERN BOTANICO-MEDICAL COLLEGE, }  
Forsyth, Georgia, 1842. }

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# A TREATISE

## ON THE

### BOTANIC PRACTICE OF MEDICINE.

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#### PRELIMINARY OBSERVATIONS.

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THE whole material world has been very properly divided into solids and fluids ; these being the only essentially different states of matter we are able to observe. From one of these states to the other, matter appears to be continually passing, but with these restrictions, that no species of matter can assume a solid form without having first been in a fluid state ; nor can any change take place in a solid till it be first formed into or suspended in a fluid. The living animal body is obedient to these general laws ; for all solid and animal matter has first been fluid, and having passed into this solid form, becomes a recipient for other fluids, out of which the solids may themselves be renovated and increased.

Whatever augments the phenomena of life is a stimulant, because life is only maintained by external stimulants.

Heat is the principal and most important of all stimulants, and when it ceases to animate the economy, all other stimulants cease to exert their powers upon it. If heat is deficient for a certain length of time, all the preservatory, restorative and sanatory powers lose their energy. Heat is necessary and constantly furnished to the fœtus by its mother ; to the animal after birth, by its lungs : and it is also supplied incidentally by all other avenues. Heat calls into play that power which composes the organs. This power forms them out of nutritive materials, and conducts free fluids through their interstices.

The composition of solids and fluids is a chemistry peculiar to living beings. The power which develops this chemistry, gives to the organs in the act of forming them, the faculties of sensation and of contractile

movement. Sensibility and contractility are then the evidences of life. Certain bodies in nature beside heat increase the sensibility and contractility of those parts of the system with which they are placed in contact. This is stimulation or irritation, and these bodies are stimulants.

"Clearly to understand the laws of life and motion, the radical principles of animalization is of infinite moment. Without some adequate views and conceptions of these, the nature of disease cannot be correctly understood, neither can we have knowledge to prescribe a rational, safe, sure and certain remedy for the removal of disease when found in the human system.

"Through many long and tedious seasons, these subjects have revolved in my mind, before I could form what I considered a correct opinion. I witnessed many distresses in the family of man, my heart was pierced with the many sorrows, until my mind was established in those simple truths, that have laid the foundation of my practice, that has been so successful in subsequent years.

"The animal body is the machine so constructed, so modified, endowed with such a capacity for life, call it vital principle, or what you please, that heat rarifying and lightening air, stimulating and expanding the lungs, put the machinery in motion, and pumps the tide of life through all its crimson channels. This combination of circumstances constitutes the living state of the living animal; for where these circumstances do not exist, there is no animal life—the animal form is dead.

"Heat does not act alone and independent of its fraternal elements, but in harmony and accordance with the whole family. But, without their elder brother, there is no life in the material universe. The elements would rest in everlasting silence and inactivity, if destitute of this generative principle of life and motion.

"Abstract the element of fire from all the other elements; stillness and silence would be universal—the life of all that breathes and moves would be swallowed up in the stillness of eternal death. Earth and sea would be and remain a solid unmoving and immovable mass—the fluid air would be consolidated to the flinty hardness of the diamond on its native rock—creation would be a blank."—*Dr. S. Thomson.*

In the profession of medicine, as well as in that of theology, many controversies have been raised and continued, merely from a misunderstanding of terms and an ignorance of opposite doctrines, or controverted points. It has been a subject of warm discussion, whether life be depending upon organization, or organization be depending upon life. The question is supposed to have been ably discussed on both sides, each party claiming men of distinguished abilities and profound erudition; and each party in turn claiming the victory. But if we follow the arguments on both sides, we shall be convinced that neither party is able to establish its position; we shall discover that simple organization, abstractly considered, has no power of producing life; nor can life exist independent of organization. The simple and undeniable fact then is, that they are mutually and equally dependent upon each other. Life resides only in the structure or body of its own forming; so it may be said, that life and organization grow up out of each other, and are inherently and necessarily united. The vital principle, or the indescriba-



ble something, which seems to be the main-spring of all the actions which take place in the human machine, has been differently explained by those whose knowledge was too limited to lead them to confess their ignorance upon subjects which they could not comprehend; yet all these have tacitly and unintentionally acknowledged the truth: yes, they have acknowledged the truth from unyielding necessity—they have failed to describe this vital principle; still they must submit to the humble admission which we are reduced to: that it is, “*an indescribable something*,” only known to us by the phenomena which it presents in the animal and vegetable kingdoms.

Contractility, as has been already observed, is a general property of all matter; but in living matter it is modified and strengthened by the influence of the vital principle. This property varies in different organs and structures in the human system. The muscular fibre appears to be highly charged with it. In the osseous system, it appears to be but little different from what it is in vegetables. There is sometimes mention made of a property of animal matter, termed elasticity; but it would appear that this is only a modification of contractility. Sensibility in animals is considered to be dependent upon a system of delicately organized cords, which have their origin in the brain and spinal marrow, and which are sent off from thence to every part of the body. These are called nerves, and are supposed by some to contain an extremely subtile fluid, termed the *encephalo-spinal fluid*. The various organs or parts of the body differ very materially in regard to the different degrees of sensibility which they naturally possess; each organ and system of organs being endowed with that quantity and quality of sensibility which is best calculated to attain the object of its creation. In order that a perfect state of health may exist in the human system, there must be an exact equilibrium maintained between the properties of contractility and sensibility, throughout the different organs of which the body is composed. The vital principle must be at its standard. It never can deviate from this, except by sinking below.

Sensibility and contractility being increased in any given part, are soon increased in several other parts. This is Sympathy.

Sympathy takes place through the medium of a particular form of the living tissue, or animal matter, which is termed nerve.

All the phenomena of association take place through the agency of nerves, which transmit stimulation from one part to another, or to more parts. These then are sympathies.

That reciprocal dependency, which is known to exist between the different members or organs of the human system, is expressed in medical science by this term. The particular or specific nature of this principle has never been clearly ascertained. It appears to form that beautiful and invisible chain, which encircles and unites all the parts of the body; the medium of vital communication between them; the principle by which one organ becomes the mutual bearer of the sufferings of another. It enables each member of the system, to “feel for others’ wo, and patiently endure its own.”

Were we to take a limited view of this principle in human nature, we might even be led to conclude, that “nature is not wise in all her

works." For we should see organ after organ becoming involved in disease through this medium of sympathy. We should see original or idiopathic disease of the liver, extending itself to the lungs, stomach, and finally to all parts of the body, involving even the mind itself in consequences of the most deplorable and melancholy character. But when we survey the whole system of physical sympathy, we shall discover abundant cause to admire the Author of nature, as much in this, as in the rest of his works. By sympathy, the united strength of all the organs of the system are brought to resist the attacks of the many causes which operate upon the body to produce disease. The massed strength of any one individual organ of the system, would, in all cases, where any considerable cause of disease should exist, prove totally inadequate to eradicate or remove this cause; but when a union of all the forces of the system make a simultaneous attack upon any morbid cause, it must generally yield. The general sympathy of the human system may be compared to the General Government of the United States. Each State, for its own safety and for the welfare of the others, has voluntarily entered into a social compact with all the others, and has pledged herself to aid in preserving the liberty of the whole. She still reserves the privilege of enjoying the liberty of her own conscience, and of forming her own laws for her individual government.

The various organs of the system are under the truly republican government of universal sympathy. This union seems to have been formed with a strict regard to the well being of the whole body; as if every organ was sensible of the truth of the motto, "united we stand, divided we fall." The individual laws which govern each organ have some peculiarities of a specific nature, adapted to the particular function which it performs in the animal economy. The sympathy existing between the body and mind, or the *physico-mental* sympathy presents to the philosophic mind a field of curious and interesting speculation. That diseases of the body affect the mind, no one of experience and observation can deny; nor are the affections of the body from diseases of the mind less conspicuous. The actual exercise of the mind is depending in a certain degree upon the vital energy imparted to it by the body. So, the functions of the body are in some degree under the special influence of the mind.

The *modus operandi*, or the manner in which many medicines produce their effects upon the human system, is only explicable upon the principle of physical sympathy. Some medicines, upon being taken into the stomach, affect the whole system almost instantaneously. This must undoubtedly take place through the medium of nervous physical sympathy. No one part of the body can be materially affected, for a considerable length of time, without affecting the other parts. Hence when an organ receives an injury, which produces inflammation in it, the heart and arteries take on an increased action, giving rise to what is termed in medical language, *sympathetic or symptomatic fever*. But a more admirable and exalted principle of sympathy, than has yet been noticed is that which exists between mind and mind. This is depending upon virtue and knowledge. The extensive exercise of it is congenial to every noble principle of the soul. It contributes materially to the

health of the body, and to the happiness of the mind. It is that which causes us to weep with those who weep, and to rejoice with those who rejoice; it is by the exercise of it, that we may learn that there is a joy in grief.

But to return again to the subject of physical sympathy. We find it exerting itself in all diseases; distributing strength and vital energy to those parts, whose peculiar situation at the time may demand a more than ordinary degree of vitality. Before we proceed to a further examination of the phenomena produced by sympathy, it may not be improper to observe, that the sympathy of the body is sometimes divided by authors into "sympathy of *equilibrium*," and "sympathy of *association*." The sympathy of association is produced suddenly and for a short time; that of equilibrium is produced more slowly, and continues in operation during a much longer time. The sympathy of equilibrium is seen in the effects produced on any one organ from the inflammation of another; an example of which we have in case of gastric inflammation, or inflammation of the stomach, where the brain is very sensibly and materially affected.

We have an instance of the sympathy of association in the mutual increase of action of the skin and liver; but if this increased action is continued long, then this association is set aside by a stronger and more general principle of the equilibrium of action, and the sympathizing part is weakened. Upon this principle may be explained the prevalence of affections of the liver in warm climates. As the warm season approaches, the vigilant eye of nature perceives the gradual rise of the animal heat; it sees the necessity of instituting some process, to prevent the temperature of the system from rising above its healthy standard. By observing the actions of the different parts of the system, we shall discover the process of reducing animal heat to be an accelerated action of the perspiratory system. Every one knows that he sweats more in warm weather than in cold; and it is for this reason, viz. to reduce the animal temperature. In southern climates, nature is obliged to push this process to a great extent; and as the skin and liver are sympathetically connected, the latter organ becomes weakened, upon the principle of the sympathy of equilibrium; the action of the liver is first increased, but it being the sympathizing part, is finally subjected to the laws of equilibrium of action. The liver, then, being in a debilitated condition, at the time when the autumnal season sets in, is but illy prepared to meet the frequent attacks made upon it, through the medium of *cutaneo-hepatic* sympathy, by the sudden transitions of atmospherical temperature, so common in southern climates, especially at that season of the year. The perspiration, by some slight exposure, is checked; giving rise to obstruction of the liver, or preventing the excretion of the bile. This gives rise to the bilious appearance observed in those fevers denominated *yellow* and *bilious fevers*. To a cause, though opposite when abstractly considered, yet similar in effect, may be attributed the general prevalence of pneumonic affections, or diseases of the lungs in northern latitudes.

In order to maintain a proper and necessary consistency in the fluids of the body, nature has several *chemico-animal processes*, by which

she produces this effect. One of these is that of natural insensible perspiration. But in cold weather the action of the skin is diminished, in order that a due degree of warmth may be supported in the system; but to effect the object before mentioned, viz. to prevent the fluids from becoming too much attenuated, the pulmonary system takes on an increased action. This action being continued, must of necessity, to a certain extent, give rise to weakness of the lungs, rendering them less able to withstand the attacks of a severely cold air, to which they continually present such an extended surface. The doctrine of sympathy is one of great moment to the practitioner of medicine, both in a pathological and practical point of view. It is upon this principle, or through this medium, that he is enabled to bring about many of those desirable results, which follow the exhibition of his medicine, and which are his best rewards, for the anxiety and deep responsibility which is imposed upon his mind, by the exercise of his profession.

Sensibility and contractility are distributed, in different degrees, to the various tissues which compose the living system. Those which possess them in the highest degree receive the impression of stimulants directly, and transmit it to other organs. They are, then, the natural movers of the sympathies.

The tissues which may be considered as the natural prime-movers of the sympathies, are those in which the nervous matter is found under a pulpy form, mixed with the sanguineous capillary vessels, and also with other vessels which contain albuminous or gelatinous fluids. They are the skin, and the cerebral senses, which are distinguished as the external; also the mucous membranes, which constitute the internal senses.

All the organs of sense are exposed, by their very nature, to the action of external agents, and also of those which are internal; and the stimulation they receive from either is transmitted to the brain, their common centre. Besides, from these different points, stimulation is transmitted to the other tissues. And it is thus that the functions are mutually supported.

Every stimulation, capable of transmitting a perception to the brain, pervades the entire nervous system of relation. It is then reflected to the mucous membranes, whence it is once more transmitted to the centre of perception, which judges of it according to the impression received from the viscus to which the mucous membrane belongs, and is determined to action according to the pleasure or the pain it receives, and this action always tends to prolong and repeat the impressions, or to remove the cause.

The action instituted by the cerebral centre of relation is performed by means of the muscular locomotive apparatus under the command of the brain; and the same nerves which served to transmit the impression, serve also to execute the will of the centre of perception, by that portion of their tissue which communicates with the locomotive muscles.

Whilst an impression, or rather the stimulation which results from an impression, traverses the nervous system of the viscera, it gives rise to movements in the muscles forming part thereof, modifies the circulation of all the fluids which pass through them, and produces even involuntary contractions in the locomotive muscles.



Whilst the stimulating influence of the brain is exerted voluntarily or the reverse, upon the locomotive muscles, stimulation is also communicated, but involuntarily, to the muscular and vascular tissues of the viscera; because the nerves of relation are common to the muscles of locomotion and the viscera.

The voluntary movements having brought the nutritive materials in contact with the organs of assimilation, these last assimilate them to the wants of the individual.

Assimilation is a phenomenon of the first order which cannot be accounted for by the action of sensibility and contractility; it can be attributed only to the creating power, and is one of the acts of the living chemistry.

Absorption depends, in the first place, on the affinities of the living chemistry; in the second, on the exercise of sensibility and contractility.

The circulation is under the dominion of sensibility and contractility in the heart and blood-vessels, so far as a certain point of decrease which it is difficult to ascertain: beyond this point, and at that where the extravasated fluids run between the fibres, these fluids are moved partly by the heart, partly by the contractility developed by the local sensibility, and partly by the affinities of the living chemistry which are constantly directed by the creating power. The same observation is to be applied to the causes of the motion of the fluids in the organs called secretory.

Whilst the fluids move in the tissues, the composition and decomposition of those tissues, as well as the formation of the fluids which are to remain for a greater or lesser time in their interstices, take place. These three phenomena, of which nutrition is composed, essentially belong to the living chemistry, because sensibility and contractility do no more than present to the organs the assimilated materials, and eliminate the fluids unnecessary to the process of composition, as well as those disengaged by that of decomposition.

Whilst the fluids move through the tissue of the glands, there occur, besides nutrition, changes in the form of those fluids which are not made use of in that process; these changes, which belong to the living chemistry, are such that every gland has its own characterized by phenomena peculiar to each. Sensibility as well as contractility are of no other use than to eliminate the newly formed fluids, in order to conduct them off externally if useless, or to deposit them on the mucous surfaces if intended to concur in a particular function.

Embryogeny is a product of the living chemistry. Sensibility and contractility carry the embryo into the uterus; the vital chemistry causes its development and gives it its particular sensibility and contractility; its expulsion is effected by the sensibility and contractility of the mother.

There exists an order of nerves situated along the vertebral column, having for their centre ganglia peculiar to themselves; the whole order bears the name of the great sympathetic: It is better to call them ganglionic nerves.

The ganglionic nerves penetrate through the viscera and muscles along with the nerves of relation and the blood-vessels of those organs; they exist in great number in the viscera and muscles of the trunk, but there are very few in the muscles of the limbs.

A wound of the ganglionic nerves develops neither pain nor convulsion in the first instance; they do not transmit sensations to the brain, nor the commands of the brain to the organs.

The ganglionic nerves can only preside over the internal actions that are not directed by the cerebral centre. Blended with the capillary system of the viscera, their use is to regulate and transmit stimulation from one part to another, according to the wants of the creating power; that is to say, they are particularly subservient to the vital chemistry.

The ganglionic nerves concentrate the stimulating influences of the cerebral nerves, and make them subservient to the actions that are independent of the centre of perception. Hence the will can neither withdraw nor even control the stimulation it has once transmitted to them through the agency of the functions of relation.

The ganglionic nerves render the vital force of the animal subservient to the living chemistry, notwithstanding the influence of the will; and when the amount of this force is no longer sufficient to the performance of the two great orders of functions, these nerves divert it from the functions of relation and concentrate it in those of nutrition: they operate this diversion by accumulating the vital force and the fluids along with it in the vessels of the viscera, and especially in those of the brain; this is what produces sleep.

When irritation is predominant in the viscera, the ganglionic nerves cause it to flow back to the organs of relation through the medium of the cerebral nerves with which they communicate in these same viscera; and it is no more in the power of the will to prevent this irritation, than to take back from the viscera that which it has once transmitted to them.

The centre of relation, under the influence of the viscera, excites, with or without the concurrence of the will and the knowledge of the animal, certain actions in the locomotive organs which are in direct proportion to the visceral irritations, and which terminate only in the cessation of those irritations, or in the engorgement, compression, and disorganization of the brain.

Whenever a stimulation is excited in the economy capable of giving a shock to the cerebral nerves, it is transmitted to the centre of relation, which may, in consequence, execute certain movements, without the consciousness or will of the animal. The phenomena, therefore, which give the idea of consciousness are discontinued, whilst the perception and reaction of the centre of relation are continued.

The perception of the cerebral centre, attended by consciousness, are known by the name of *sensibility*, and the movements it directs are called voluntary. But the perceptions of the cerebral centre unaccompanied with consciousness, and the motions it unconsciously determines, are not referred to sensibility, nor to the will; they are a particular species of organic phenomena. The nervous cerebral apparatus presents, then, two forms in its functions.

Whenever consciousness experiences a perception, it feels at the same time in the brain and externally to the brain. Now the extra-cerebral points in which consciousness experiences sensations are not the external senses only, they are also the accidental points of inflammation; because inflammation reduces the extremities of the nerves of relation of most of

the tissues to a state pretty analogous to that of the nervous extremities which form part of the natural sensitive surfaces.

The will can refuse to execute certain acts solicited by sensations excited by the natural and accidental senses. There are others which it can only retard for a longer or shorter period.

The will does not enjoy the power of retarding or preventing the execution of actions demanded by the sensations except when the encephalic apparatus is already developed, enjoys a state of health, and is wakeful. This faculty has no existence, then, in early life; it subsequently improves by the exercise of the intellect. In sleep, in mania, and other morbid conditions, it presents a host of modifications.

The actions which the will can only retard are solicited by sensations which proceed from viscera essential to life, and which have relation to the indispensable performance of their functions.

Among the actions which the will can refuse to perform, some are solicited by the wants of viscera essential to life, but these wants are not urgent; when they become so, either the will consents, or the reason is destroyed, or death supervenes. Others, again, have connection with the performance of functions which are not necessary to the preservation of life, and here too, the refusal of the will may engender madness.

When the animal suffers and undergoes death for having refused to satisfy the wants of the viscera, it betokens the triumph of the understanding over instinct. But if reason is alienated by this resistance, that is by the super-irritation which the wants have excited in the brain, then instinct triumphs over intellect.

Instinct consists in sensations developed by the viscera, and which solicit the cerebral centre to cause to be performed the actions necessary to the exercise of the functions.

The actions solicited by instinct are often performed without the participation of the will, and even in its absence; instances occur in the fœtus, in the sleeping state, &c.

The action solicited by instinct predominate in the infant, and diminish in proportion to the development and advance of the understanding.

The intellect displays its actual influence over the system by the modifications which it produces in the sensations determined by instinct, and also in the actions by it solicited.

The passions are sensations awakened, in the first instance, by instinct, but afterwards quickened and exalted by the attention bestowed on them by the intellect, so that they gain the ascendancy, and produce acts more or less remarkable, and always calculated to satisfy the instinctive wants, to which they owed their origin.

The passions, like mania, evince the triumph of the viscera, and consequently that of instinct over intellect. So do they produce mania itself.

The passions always combine instinct and intellect.

Instinct may operate either with, or without the aid of the intellect.

Intellect never operates without the blended aid of instinct.

The intellectual faculties may operate without passion, but never without a sensation of pleasure or of pain.

The pleasure and the pain which accompany the exercise of the intellectual faculties have the same seat as the pleasure and the pain

attending the passion ; because the centre of relation cannot experience a sensation in the brain without also experiencing it in the viscera : and it is always in these last that it feels the most.

Whilst the intellect is occupied with the ideas relating to the wants of a viscus, or to the functions of a sense, the nerves of this viscus or sense are always in action, and they transmit sensations to the centre of relation ; it follows that the destruction of the nerves of a sense involves the gradual loss of the ideas to which they were wont to give origin.

An acephalous fœtus may live : It dies as soon as it is born, because it then requires the influence of respiration, which depends on the brain.

Those organs which lose their communication with the brain, soon lose their vitality and their nutrition ; they wither and die. This state seldom occurs, because in palsies the sequelæ of affections of the brain, there is still a communication kept up with this viscus. But as the principal connection is through the medium of a diseased point, and the others by anastomoses with nervous cords rather inconsiderable, their influence is not able to maintain action in the organ to the requisite degree.

It is not by the defect of a peculiar principle of which the brain may be supposed to be the source, that the moving apparatus when paralysed withers ; but from the want of excitement and exercise.

The want of action in paralysed muscles does not proceed from the inaptitude of their nerves to excite motion, but from the absence of sufficient communication with the brain. After nutrition has been languid for some time in the paralysed part, its nerves deteriorate and are no longer capable of exciting action.

The presence of oxygenated blood may preserve nutrition in paralysed parts, because there is yet some communication with the brain, but deficiency of exercise renders this nutrition more and more languishing, without always producing death in the part.

All these diversities of vital energy are now well known to be dependent on the organ of the brain, as the instrument of the intellectual powers, and the source of the sensile and motory. Though, from the close connection and synchronous action of various other organs with the brain, and especially the thoracic and abdominal viscera, such diversities were often referred to several of the latter in earlier ages and before anatomy had traced them satisfactorily to the brain as their fountain-head. And of so high an antiquity is this erroneous hypothesis, that it has not only spread itself through every climate on the globe, but still keeps a hold on the colloquial language of every people ; and hence the heart, the liver, the spleen, the reins, and the bowels generally, are, among all nations, regarded either literally or figuratively, as so many seats of mental faculties or moral feeling. We trace this common and popular creed among the Hebrews and Arabians, the Egyptians and Persians, the Greeks and Romans ; among every savage, as well as every civilized tribe ; nor is there a dialect of the present day that is free from it : and we have hence an incontrovertible proof that it existed as a doctrine of general belief at a time when mankind, few in number, formed a common family, and were regulated by common notions.

The study of anatomy, however, has corrected the loose and confused



ideas of mankind upon this subject ; and while it distinctly shows us that many of the organs popularly referred to as the seat of sensation, do and must, from the peculiarity of their nervous connexion with the brain, necessarily participate in the feelings and faculties thus generally ascribed to them, it also demonstrates that the primary source of these attributes, the quarter in which they originate, or which chiefly influences them, is the brain itself.

From this general organ arises a certain number of long, whitish, pulpy cords, composed of bundles of fibres, capable of being divided and subdivided into minuter bundles of fibrils, or still smaller fibres as far as the power of glasses carry the eye. These cords are denominated nerves ; they are surrounded, to their extremities, by one or more of the common membranes of the brain, and, by their various ramifications, convey different kinds or modifications of living power to different parts of the body, keep up a perpetual communication with its remotest organs, and give motivity to the muscles.

As the brain consists of three general divisions, it might, at first sight, be supposed that each of these is allotted to some distinct purpose ; as, for example, that of forming the seat of intellect or thinking ; the seat of the local senses of sight, sound, taste, and smell, and the seat of general feeling or motivity. But the nice hand of the anatomist has confounded all such speculations by tracing up to each of these divisions both nerves of general, and nerves of particular purposes. Thus the cerebrum, which gives rise to the olfactory and optic nerves (serving the purpose of pure sensations) gives rise also to the oculorum motorii, apparently serving the purpose of muscular motion. So the cerebellum gives rise to the trochleatores and the trigemini, the first chiefly employed in producing motive power, the second sensile power : while from the medulla oblongata originate the auditory, the par vagum, and the lingual ; the first a nerve of hearing, the second of feeling, and the third of motivity : at the same time that many parts of the brain maintain an interunion with other parts by means of ganglions, commissures and decussations of nerves ; whence injuries on one side are often accompanied with loss of motion or feeling in the organs of the other side.

Of the nature of the mind or soul itself, we know little beyond what REVELATION has informed us ; we have no chemical test that can reach its essence ; no glasses that can trace its mode of union with the brain ; no analogies that can illustrate the rapidity of its movements. And hence the darkness that, in this respect, hung over the speculations of the Indian gymnosophists and the philosophers of Greece continues without abatement, and has equally resisted the labors of modern metaphysicians and physiologists. That the mind is an intelligent principle we know from nature ; and that it is a principle endowed with immortality, and capable of existing after death in a state separate from the body, to which, however, it is hereafter to be re-united at a period when that which is now mortal shall put on immortality, and death itself be swallowed up in victory—we learn from the God of nature. And with such information we may well rest satisfied : and, with suitable modesty, direct our investigations to those lower branches of this mysterious subject that lie within the grasp of our reason.

This subject cannot, however, be dropped without it being observed that the discussion concerning the particular entity of the mind, seems to have been conducted with an undue degree of heat and confidence on all sides, considering our present ignorance of whatever substance has been appealed to as constituting its specific frame.

Is the essence of the mind, soul, or spirit, material or immaterial? The question, at first sight, appears to be of the utmost importance and gravity; and to involve nothing less than a belief or disbelief, not indeed, in its divine origin, but in its divine similitude and immortality. Yet, I may venture to affirm, that there is no question which has been productive of so little satisfaction, or has laid a foundation for wider or wilder errors within the whole range of metaphysics. And for this plain and obvious reason, that we have no distinct ideas of the terms, and no settled premises to build upon. Corruptibility and incorruptibility, intelligent and unintelligent, organized and inorganic, are terms that convey distinct meanings to the mind, and impart modes of being that are within the scope of our comprehension. But materiality and immateriality are equally beyond our reach. Of the essence of matter we know nothing, and altogether as little of many of its more active qualities: inasmuch that, amidst all the discoveries of the day, it still remains a controvertible position, whether light, heat, magnetism and electricity are material substances, material properties, or things superadded to matter and of a higher nature.

If they be matter, gravity and ponderability are not essential properties of matter, though commonly so regarded. And if they be things superadded to matter, they are necessarily immaterial, and we cannot open our eyes without beholding innumerable proofs of material and immaterial bodies co-existing and acting in harmonious union through the entire frame of nature. But if we know nothing of the essence, and but little of the qualities of matter, of that common substrate which is diffused around us in every direction, and constitutes the whole of the visible world, what can we know of what is immaterial? of the full meaning of a term that in its strictest sense comprehends all the rest of the immense fabric of actual and possible being; and includes in its vast circumference, every essence and mode of essence of every other being, as well below as above the order of matter, and even that of the Deity himself!

Shall we take the quality of extension as the line of separation between what is material and what is immaterial? This, indeed, is the general and favorite distinction brought forward in the present day; but it is a distinction founded on mere conjecture, and which will by no means stand the test of inquiry. Is space extended? every one admits it to be so. But is space material? is it body of any kind? Des Cartes, indeed, contended that it is body, and a material body; for he denied a vacuum, and asserted space to be a part of matter itself: but it is probable that there is not a single espouser of this opinion in the present day. If then extension belong equally to matter and to space, it cannot be contemplated as the peculiar and exclusive property of the former; and if we allow it to immaterial space, there is no reason why we should not allow it to immaterial spirit. If extension appertain not to the mind or thinking principle, the latter can have no place of existence; it can

exist NO WHERE : for WHERE or PLACE is an idea that cannot be separated from the idea of extension. And hence, the metaphysical immaterialists of modern time freely admit that the mind has NO PLACE of existence : that it does exist NO WHERE ; while, at the same time, they are compelled to allow that the immaterial Creator, or universal Spirit, exists EVERY WHERE, substantially as well as virtually.

Nor let it be supposed that the difficulty is removed by adding to matter the quality of solidity in conjunction with that of extension, and hence distinguishing it as possessed of SOLID EXTENT ; for the quality of solidity is less characteristic of it than any we have thus far taken notice of ; and is perpetually fleeing from us as we pursue it. That matter is infinitely divisible we dare not say, because we should hereby reduce it to mathematical points, and because, also, there would, in such case, be no certain or permanent basis to build upon, and to ensure a punctuality of material cause and effect : and hence, Sir Isaac Newton was obliged to suppose that it is possessed of ultimate atoms which are solid and unchangeable. But of these the senses can trace nothing, and our admission is nothing more than conjectural.

Let not the author, however, be misunderstood upon this abstruse and difficult subject. That the mind has a DISTINCT NATURE and is a DISTINCT REALITY from the body ; that it is gifted with immortality, endowed with reasoning faculties, and capacified for a state of separate existence after the death of the corporeal frame to which it is attached, are, in his opinion, propositions most clearly deducible from revelation, and, in one or two points, adumbrated by a few shadowy glimpses of nature. And that it may be a substance strictly IMMATERIAL and ESSENTIALLY DIFFERENT from matter is both possible and probable ; and will hereafter, perhaps, when faith is turned into vision, and conjecture into fact, be found to be the true and genuine doctrine upon the subject. But till this glorious era arrives ; or till, antecedently to it, it be proved, which it does not hitherto seem to have been, that matter, itself of divine origin, gifted even at present, under certain modifications, with instinct and sensation, and destined to become immortal hereafter, is physically incapable, under some still more refined, exalted, and spiritualized modification, of exhibiting the attributes of the soul, of being, under such a constitution, endowed with immortality from the first, and capacified for existing separately from the external and grosser frame of the body ; and that it is beyond the power of its own Creator to render it intelligent, or to give it even brutal perception, the argument must be loose and inconclusive : it may plunge us, as it has plunged thousands before, into errors, but can never conduct us to demonstration. It may lead us, on the one hand, to the proud Brahminical and Platonic belief that the essence of the soul is the very essence of the Deity, and consequently a part of the Deity himself : or, on the other, to the gloomy regions of modern materialism, and to the cheerless doctrine that it dies and dissolves in one common grave with the body.

It is no fair objection, however, against the immaterialist, that by contemplating the mind as a distinct essence from that of the body, man is hereby rendered a compound being, possessing at one and the same time two distinct lives mysteriously united in an individual frame, and



running in parallel lives till the hour of death. For whilst the known and obvious laws and faculties of the mind and body are so widely different, as they are acknowledged to be on all hands, some such composite union has been and must be allowed under every hypothesis whatever. And least of all have the sceptical physiologists of the present day any right to triumph upon such an objection; who, drawing no light from nature, and rejecting that of sacred writ, contemplate the mind as formed of the same gross modification of matter as the body, and doomed to fall with it into one common and eternal dissolution. For even these acute materialists, with all the aid of physiological, anatomical and chemical research, instead of simplifying the human fabric, have made it more clumsily complex, and represented it sometimes, indeed, as a duad, but of late more generally as a triad, of unities, a combination of a corruptible life within a corruptible life two or three deep, each possessing its own separate faculties or manifestations, but covered with a common outside.

This remark more especially applies to the philosophers of the French school: and particularly to the system of Dumas, as modified by Bichat; under which more finished form, man is declared to consist of a pair of lives, each distinct and co-existent under the names of an organic and an animal life; with two distinct assortments of sensibilities, an unconscious and a conscious. Each of these lives is limited to a separate set of organs, runs its race in parallel steps with the other; commencing coetaneously and perishing at the same moment. This work appeared at the close of the past century; was read and admired by most physiologists; credited by many; and became the popular production of the day. Within ten or twelve years, however, it ran its course, and was generally either rejected or forgotten even in France; and Mr. Richerand first, and M. Magendie afterwards, thought themselves called upon to modify Bichat, in order to render him more palatable, as Bichat had already modified Dumas. Under the last series of remodelling, which is that of M. Magendie, we have certainly an improvement, though the machinery is quite as complex. Instead of two distinct lives, M. Magendie presents us with two distinct sets or systems of action or relation, each of which has its separate and peculiar functions, a system of nutritive action or relation, and a system of vital. To which is added, by way of appendix, another system, comprising the functions of generation. Here, however, the brain is not only the seat but the organized substance of the mental powers: so that, we are expressly told, a man must be as he is made in his brain, and that education, and even logic itself, is of no use to him. "There are," says M. Magendie, "justly celebrated persons who have thought differently; but they have hereby fallen into grave errors." A Deity however is allowed to exist, because, adds the writer, it is comfortable to think that he exists, and on this account the physiologist cannot doubt of his being.

Dr. Spurzheim has generally been considered, from the concurrent tenor of his doctrines, as belonging to the class of materialists: but this is to mistake his own positive assertion upon the subject, or to conclude in opposition to it. He speaks, indeed, upon this topic with a singular hesitation and reserve, more so, perhaps, than upon any other point

whatever ; but as far as he chooses to express himself on so abstruse a subject, he regards the soul as a distinct being from the body, and at least intimates that it *may be* nearer akin to the Deity. Man is with him also possessed of two lives, an AUTOMATIC, and an ANIMAL : the first produced by organization alone, and destitute of consciousness ; the second possessed of consciousness dependent on the soul, and merely manifesting itself by organization. "We do not," says he, "attempt to explain how the body and soul are joined together and exercise a mutual influence. We do not examine what the soul can do without the body. Souls, so far as we know, may be united to the bodies at the moment of conception or afterwards ; they may be different in all individuals, or of the same kind in every one ; they may be emanations from God, or something essentially different." The mind of this celebrated craniologist seems to be wonderfully sceptical and bewildered upon the subject, and studiously avoids the important question of capacity of the soul for an independent, and future existence : but with the above declarations he cannot well be arranged in the class of materialists.

The hypothesis which has lately been started by Mr. Lawrence is altogether of a different kind, and though undoubtedly much simpler than any of the preceding, does not seem to be built on a more stable foundation. According to his view of the subject, organized differs from inorganized matter merely by the addition of certain PROPERTIES which are called vital, as sensibility and irritability. Masses of matter endowed with these new PROPERTIES become organs and systems of organs, constitute an animal frame, and execute distinct sets of PURPOSES or FUNCTIONS, for functions and purposes carried into execution are here synonymous. "Life is the assemblage of ALL the functions (or purposes) and the general result of their exercise."

Life, therefore, upon this hypothesis, instead of being a two-fold or three-fold reality, running in a combined stream, or in parallel lines, has no reality whatever. It has no ESSE or independent existence. It is a mere assemblage of PURPOSES, and accidental or temporary PROPERTIES : a series of phenomena, as Mr. Lawrence has himself correctly expressed it—a name without a thing. "We know not," says he, "the nature of the link that unites these phenomena, though we are sensible that a connexion must exist ; and this conviction is sufficient to induce us to give it a NAME, which the VULGAR regard as the sign of a particular principle ; though in fact that name can only indicate the ASSEMBLAGE OF THE PHENOMENA which have occasioned its formation."

The human frame is, hence, a barrel-organ, possessing a systematic arrangement of parts, played upon by peculiar powers, and executing particular pieces or purposes ; and life is the music produced by the general assemblage or result of the harmonious action. So long as either the vital or the mechanical instrument is duly wound up by a regular supply of food or of the wine, so long the music will continue : but both are worn out by their own action ; and when the machine will no longer work, the life has the same close as the music.

In the darkness, therefore, which continues to hang over this mysterious subject, we feel incompetent to enter into the question concerning the actual essence of the mind, and are perfectly content to take its gen-

eral nature, powers, and destiny, from the only volume which is capable of giving us any decided information upon the subject; to follow it up as far as that volume may guide us, and to stop where it withdraws its assistance.

### HEALTH.

Life being a forced state, and the aggregate of those functions by which death is resisted, it may be worthy of enquiry, in what consists health? For such, indeed, is the condition in which we live, that every thing surrounding us has a tendency to produce our dissolution, by the affinities existing between their atoms, and the atoms of which a living body is composed. It is plain, therefore, that the principles of health reside in, or consists of, the just and proper exercise of all the organs which compose the human system. And any modification essentially impairing this beautiful harmony of action of the organs of the animal economy, necessarily implies disease.

An uninterrupted and constant communication of excitement kept up in all directions between the different parts of the body, is indispensable to a preservation of an equilibrium of all the functions.

In warm seasons and hot climates, excitement is imparted to animals by the external, more than by the internal surfaces. In cold seasons and climates, excitement is chiefly derived from the latter. The gastric surface becomes the principal medium of excitement; hence nutrition is more abundant.

Excitement is never uniform in the animal economy, it is always above par in certain parts, and below in one or more other parts, and successively predominates in various regions. This irregularity often terminates by destroying the balance of the functions.

Health is never disturbed spontaneously, but always because external stimulants destined to preserve the functions in their integrity, have accumulated excitement in some part, or because they have been deficient in supplying the wants of the economy, or because it has been stimulated in a manner repugnant to the vital laws, because there exists relations between the external modifiers and the whole, or several parts of the system, of which some are friendly, others repugnant to the vital laws; and these last are poisons.

Certain external modifiers diminish the phenomena of life in the organs with which they have relation; but the pain, which is developed in a debilitated part, performs the office of an excitant, which invites back the vital phenomena, sometimes favorably, sometimes injuriously to the preservation of the animal.

Excitement is also accumulated in organs by the influence of stimulant modifiers, although the sum of the general vitality is very much diminished; and this condition may continue even unto marasmus, and unto death.

The economy never undergoes over-excitement with impunity; and all those who appear the most habituated to stimuli of too much power, sooner or later experience an excess of local irritation.

### DISEASE.

A few *elementary modes* of morbid action (which modes of action are effects only, and traceable to one primary cause,) when modified by dif-

ferent grades of intensity, modes of combination, and the structures implicated, constitute the fundamental morbid conditions, by which disease is so variously marked, characterized and described.

We are told by some that "disease is morbid excitement only." Truly, it is important to answer the question, "What is disease?" and render the explanation complete and intelligible; and it is an enquiry which deeply concerns and interest mankind, and one that should be, if possible, correctly understood by all who make the healing art a profession.

Disease in its essence is diminished or obstructed vital action; a diminution of the powers of life; a debility or inability of some organ or organs to perform their natural functions: those, therefore, who are prepared to receive this definition as orthodox, cannot resist the conclusion that disease is an unit.

### CAUSES OF DISEASE.

Cold is by far the most common of the remote causes of disease. With regard to miasmata, or malaria, little is pretended to be known of its primary operations *per se* (in and of themselves,) upon the system in the production of disease; certain it is, however, that its effects ultimately are the same as those produced by cold.

Intemperance, virus, organic lesions, external violence, or mechanical injuries may all be classed in the same rank, which operate by collecting in some part of the system morbid matter, or preventing the free and universal flow of the vital principle. This is called in medical language obstruction, which is the proximate cause of all disease.

### GENERAL PRINCIPLES OF TREATMENT.

It has been premised that perfect health depends on the greatest quantity of the principles of vitality in the body. That death is an extinction of the living principle; that disease destroys health, as death destroys life. Therefore, disease is a diminution of the powers of life. That the vital powers alone can oppose disease once generated in the system. It follows, then, that to cure disease, we must increase the vital powers; that our remedies must act in accordance with those natural laws that govern animal life, else they tend not to restore health, but to derange it. It follows, then, from this axiom, that whatever has a tendency to impair health, cannot be a remedy to cure disease.

These axioms point out the only safe and sure system of practice, and the physician can never be at a loss how to proceed, nor at a stand in the choice of remedies best suited to the case, when he has the knowledge of what will produce the desired effect, viz: an increase of the vital powers in all cases. This can only be done by properly removing morbid matter from the system, and then the exhibition of such tonics and stimulants as are best suited to the age and condition of the patient.

### NATURE.

Like many other things which are at once obvious to the senses, there seems to be an inherent principle in man, which is ever manifest to ward off the approach of disease, and preserve the system in a condition of health. That principle we have called Nature. In the cure of disease we confide much in her efforts; and use such means only, as appear to assist, or run parallel with her steps. This principle



is implanted in man by the great Author of his existence, for the support and maintenance of our lives.

It ought always to be understood that in the cure of disease, Nature takes the lead and points out the way, and it is the height of presumption for the physician to attempt to take the reins from her hands; he should feel himself sufficiently honored if he is so much respected, as to be permitted to be her servant, to stand ready at her call, and obey her command. No physician can do more than to assist Nature in her efforts to effect a cure; he who attempts to do more, will be sure to do less.

### GENERAL REMARKS ON THE ADMINISTRATION OF MEDICINE.

The plain and determinate operations of the laws which govern living animal matter have been overlooked by medical writers; they were too humble in themselves to attract the observation of those whose vanity had flattered them with the idea that they had penetrated so far into the labyrinth of knowledge, as to place them beyond the reach of instruction. The common popular routine of medical practice, notwithstanding the many improvements which are pretended to have been made in it by its adherents, is, it must be admitted, still fraught with deficiencies and uncertainty, far indeed beneath the standard of perfection—an unroofed temple without a foundation.

As reformers in medicine, we profess to have made new and important discoveries. We are certain that many errors exist in the popular practice of medicine; nor are these errors confined alone to practice; errors in theory lead to errors in practice. Hence, to establish a consistent theory and system of practice, which shall be in accordance with correct physiological principles, and which shall apply to all forms of disease, is the principal object of this compilation.

Also, we design to develop some of those great truths in medical science, which have been buried centuries past in the depths of false science and fashionable prejudice, and to correct some of the many false and erroneous impressions, in relation to the Botanic practice, and to encourage the improvement in medical science.

### VAPOR BATH.

The vapor bath is not only a powerful auxiliary to health, but it is also one of the greatest luxuries in which we can indulge; notwithstanding the strong, but wholly unfounded prejudice which is known to exist in the minds of many highly respected persons in the community, and even among many respectable physicians of the old school.

We would ask why vapor bathing is so much neglected by physicians in this country? they very generally acknowledge its efficacy as a remedy, and its great power as a preservation to health. Still it is, one might almost say, criminally neglected. If there ever was a time when the use of the bath was indispensable, it cannot be less so at present, when so great a number of the various forms of disease are deemed by the mineral faculty incurable; such as scrofula, cancer, leprosy, and consumption, with a long catalogue of other chronic complaints.

Facts are of more consequence than deductions from established principles; and, could facts be generally known, much of the apprehension

in regard to the steam and vapor bath and the Botanic practice, would be done away, and the cause of medical reform much advanced.

We would urge our friends not to be backward in disseminating light on this subject. Our cause does not shun, but courts enquiry. Sir Arthur Clark, says, "Improvement or discovery in any art or science, at first, is generally opposed, either from motives of prejudice which it offends, or ignorance which it mortifies." One of the greatest physicians that ever lived acknowledged the truth of this observation, as applied to the medical profession.

In Captain Parry's expedition to the North pole, the vapor bath was constantly used by the men previous to taking their post on deck: and it was invariably found that the man who neglected to use it, could not remain on deck half so long as he who availed himself of its aid.

There is no refreshment more acceptable to the senses, or more salutary to the system at large, than is that of the bath; it is wholesome, bracing and purifying. Combe, in his *Principles of Physiology*, speaking of the vapor and warm baths, says:

"Their use is attended by the very best effects, particularly in chronic ailments, and there can be no question that their action is chiefly on the skin; and, through its medium on the nervous system. As a means of determining to the surface, promoting cutaneous exhalation, and equalizing the circulation, they are second to no remedy now in use; and, consequently, in a variety of affections which the encouragement of these processes is calculated to relieve, they may be employed with every prospect of advantage. The prevalent fear of catching cold, which deters many from using the vapor baths, even more than from warm bathing, is founded on a false analogy between its effects and those of profuse perspiration from exercise or illness. The latter weakens the body, and, by diminishing the power of reaction, renders it susceptible of injury from sudden changes of temperature. But the effect of the vapor bath, properly administered, is very different. When not too warm or too long continued, it increases instead of exhausting the strength, and, by exciting the vital action of the skin, gives rise to a power of reaction, which enables it to resist cold better than before. This I have heard many patients remark, and the fact is well exemplified in Russia and the north of Europe, where, in the depth of winter, it is not uncommon for the natives to rush out of a vapor bath and roll themselves in the snow, and be refreshed by doing so; whereas, were they to attempt such a practice after severe perspiration from exercise, they would inevitably suffer. It is the previous stimulus given to the skin by the vapor bath, which is the real safeguard against the coldness of the snow. Common experience affords another illustration of the same principle. If, in a cold winter day we chance to sit for some time in a room imperfectly warmed, and feel, in consequence, a sensation of chilliness over the body, we are much more likely to catch cold on going out, than if we had been sitting in a room comfortably warm.

"In the latter case, the cutaneous circulation and nervous action go on vigorously; heat is freely generated, and the vital action of the skin is in its full force. The change to a lower temperature, if accompanied with exercise to keep up this vitality, is then felt to be bracing and

stimulating, rather than dimming. But, the effect is widely different when the surface is already chilled before going out.

"The vitality of the skin being diminished, reaction cannot follow additional exposure; the circulation leaves the surface and becomes still more internal; and, if weakness exists in the throat or chest, cold is the almost constant result. Many suffer from ignorance of this principle. The vapor bath is thus calculated to be excessively useful, both as a preventive and as a remedial agent. Many a cold and many a rheumatic attack, arising from checked perspiration or long exposure to the weather, might be nipped in the bud by its timely use. In chronic affections, not only of the skin itself, but of the internal organs with which the skin sympathizes most closely, as the stomach and intestines, the judicious application of the vapor bath is productive of great relief. Even in chronic pulmonary complaints, it is according to the continental physicians, not only safe, but very serviceable; particularly in those affections of the mucous membrane which resemble consumption in so many of their symptoms.

"That the tepid or warm water bath, is a safe and valuable preservative of health, and an active remedy in disease, is most certain. But many imagine the tepid and warm bath to be weakening; but experience shows that they are so only when abused. When not too warm, and not prolonged beyond fifteen or twenty minutes, the tepid bath may be employed daily with perfect safety and advantage by persons in health; while invalids, whose condition require its use, are often strengthened by a much longer and equally frequent immersion.

"Instead of being dangerous by confining liability to cold, it is, when well managed, so much the reverse, that the author of these pages has used it much and successfully for the express purpose of diminishing such liability, both in himself and others with whom the chest is delicate. In his own instance in particular, he is conscious of having derived much advantage from its regular employment, especially in the cold months of the year, during which he has uniformly found himself most effectually strengthened against the impression of cold, by repeating the bath at shorter intervals than usual."

The mode of applying the vapor bath is well known to the Botanic fraternity; but as this work may fall into the hands of some, who may be unacquainted with the manner of its application, the following directions are appended for their instruction, from Dr. Thomson's Guide to Health:

"Take several stones of different sizes, and put them into the fire till red-hot, then take the smallest first, and put it into a pan, or kettle of hot water, with the stone about half immersed; the patient must be undressed, and a blanket put around him, so as to shield his whole body from the air, and then place him over the steam. Change the stones as they grow cool, so as to keep up a lively steam, and keep him over it; if he is faint, throw a little cold water on his face and stomach, which will let down the outward heat and restore strength: after he has been over the steam long enough, which will generally be about fifteen or twenty minutes, he must be washed all over with cold water, and put into bed, or may be dressed, as the circumstances of the case



may permit." Before he is placed over the steam, composition or some diffusible stimulant should be given in suitable quantities, to assist in promoting perspiration. If the patient should be faint while over the bath, the head and face should be wet with a towel wrung out in cold water.

#### DIFFERENT MODES OF APPLYING THE VAPOR BATH.

The vapor can be easily conveyed to any suitable distance from the fire, by a conductor, and introduced into the bed, or under a chair, as the case may be. The conductor may be made of copper or tin, (copper is best,) in small cylindrical tubes, about one-half inch in diameter, and ten or twelve in length, with one extremity of each, a very little enlarged, for the admission of the smaller end of the next joint, so that any length of pipe or conductor may be thus obtained, that is necessary. An elbow, with one portion of it, made from its crook or joint, to the extremity, cone-shaped, or its diameter somewhat enlarged, will be necessary, and may be so constructed, as to apply to almost any tea kettle in common domestic use. A small piece of cloth or paper should be wrapt around the spout of the kettle, and this large extremity of the elbow, (which may not be more than four or five inches long,) firmly applied. The lid of the kettle should be put on tight, so that the vapor cannot escape; or, what is regarded as an improvement in the application of the conductor to the kettle, consists of a circular plate of some metallic substance, (suppose copper,) and its appendages, which we will describe as minutely as possible, that it may be fully comprehended, as it is deemed decidedly the best portable apparatus hitherto constructed.

The great object in fixing any apparatus for administering the vapor bath, is to have it tight, so that the vapor cannot escape; for frequently not more than one half the amount of vapor is obtained, that is necessary to a good operation, or to accomplish the purpose required.

The circular plate is supposed large enough to fully cover the top, or or mouth of any tea-kettle, and it is very important that it should be fitted and fastened perfectly tight. To obtain this desirable object, a cross-bar, or plate of iron, say one inch and a half wide, and of a length to reach across the mouth, is to be introduced into the kettle. Two screws, of suitable size, pass through the circular plate and enter the cross-bar within—the ends of which cross-bar, may be a little bent, the better to fit the upper, internal surface of the kettle. A piece of thick buff cloth, or of an old hat, should be fastened to the underside of the plate, (the centre being cut out.) It will now be seen, that the plate can be screwed upon the top of any tea-kettle, with any degree of tightness, which will prevent the possibility of the vapor escaping. The screws that confine the plate to the cross-bar, should be about two inches apart, to which, should also be connected about two inches of pipe for the escape of the vapor, and admission of water. Within a third of an inch of the lower extremity of this portion of pipe, (which is the upper portion of the screw,) a circular projection, or shoulder, of suitable width, is attached. The hole in the plate, is made to conform to the diameter of this piece of pipe, which is introduced as far as the shoulder. If the reader does not clearly comprehend the manner in which the screw is connected to the pipe, and still, with an aperture sufficient to

allow the vapor to pass off, he must reflect that the head of the screw, in the first place, is made cylindrical, about half an inch in length, and equal in diameter to that of the tube; that it is now filed down on each side to correspond in thickness to the diameter of the body of the screw, and thus introduced into the lower end of the short piece of pipe, which causes a segment of a circle, for an opening on each side.

To one of these tubes is attached the conductor; the other should be stopped by a cork, or metallic cap. To make this apparatus complete, a stop-cock, as a safety valve, may be connected to any joint that is desired.

This apparatus is very portable, and more thorough, efficient, and convenient in its use, than any other invention.

#### LOCAL BATH.

This can be applied by having the last joint contracted in its extremity, to one-sixth, or one-eighth of an inch in caliber. If the vapor is forced through with considerable force, twelve or sixteen inches is as near as the hand can be borne to the pipe.

#### MEDICATED BATH.

Any medication can be introduced into the bath, which is desired, in the following manner: A cup holding a sufficient quantity, say a pint, is made with a short portion of pipe soldered in on the one side, near the top, and on the opposite side, near the bottom; into these, the tubes may be introduced. The vapor will now pass through the cup and will extract, and convey off, a portion of the medicinal properties of whatever vegetable is in the cup. The cup should be supplied with a tight lid.

In the application of the general vapor bath, the box is decidedly the most convenient and agreeable to the patient. It should be about six feet in height, and from two and a half to three feet in its other proportions. It should be constructed very tight, with a door and an aperture, for the admission of the head, (in front of which, there may be a curtain,) a seat, and in the top, a large number of small holes should be made, that the shower bath, may also, at any time, be given.

Another form of a box, favorably recommended, is about three feet high, and other dimensions corresponding. In this the patient is seated, with a blanket surrounding him, pinned tight under the chin, resting upon the top of the box.

#### A COURSE OF MEDICINE.

This consists of the application of the vapor bath—the administration of an emetic and an enema. Two steamings are usually given—one before, and one after the emetic—but sometimes the latter is omitted. While the patient is in the bath, composition, or any of the diaphoretic compounds, may be given with great advantage, as their action upon the capillary system, is of the first importance. If the patient is faint, give a little composition tea, and wipe the face, head, or stomach, with a towel wet in cold water: this will afford instant relief. From twenty, to twenty-five minutes, is a medium time for the patient to remain in the bath; when he comes out, he should be wiped dry, invested with his linen, and get into bed. It will be noticed, this is only a preliminary step for the successful operation of a lobelia emetic, (the mode of operation and peculiarity of which is given in detail, under the head of

emetics in second volume, which see,) which will require, commonly, from two to three hours. From one-half to two-thirds of a common sized teaspoonful of the pulverized seeds, may be given in warm water, composition, pennyroyal, or any of the mint teas, every fifteen minutes, until vomiting is produced. After the action of the emetic has subsided, the bowels should be moved by an enema, (injection) and if habitual constipation has existed any length of time, a mild laxative should also be advised, (see aperients, second vol.) The second steaming and a thorough wiping off with a rough towel and cold water, completes the regular Course of Medicine.

### MIASMATA.

The term *miasmata* is here used as designating a highly important class of febrific agents of *gaseous* form, which act on the animal system through the medium of the atmosphere. This *class* of agents consists of two *orders*, namely—1. *Infection*, comprehending those febrific effluvia which are generated by the decomposition of vegetable and animal matter; and—2. Aëriform contagions, generated by the animal system in a state of disease.

1. *Infection*; or that variety of febrific agents which is produced by decomposition out of the animal system, consists of two *genera*, namely—1. Those which result from the humid decomposition of vegetable and animal substances contained in the public filth of cities, in marshes, and in other soils and situations furnishing these materials. This genus is usually designated by the term *marsh miasm*; but from the common or public source of these morbid effluvia, it has been proposed, and by some adopted, with much propriety, I conceive, to distinguish them by the compound term *koino-miasmata*. 2. Those febrific effluvia which are generated by the decomposition of the natural exhalations and excretions of the human body, accumulated and confined in crowded and ill-ventilated habitations. These deleterious effluvia, originating from the decomposition of matter derived from the human body, have, with equal propriety, been designated by the term *idio-miasmata*, expressive of the personal or private character of their source. Before treating of these febrific agents, in an etiological point of view, it will be proper to describe, more circumstantially, the manner and circumstances in which they are generated, as well as their physical characters, so far as these can be known.

1. *KOINO-MIASMATA*, usually designated by the terms *marsh-miasmata*, or *malaria*. This morbid agent was not unknown to the ancient Greek physicians. They personified it under the emblem of a many-headed monster, whose devastating influence was so severely exercised over the luxuriant fields of Argolis, that it was made one of the labors of the potent son of Alcmenus to rid the country of this dreaded source of pestilence. Hercules, accordingly, drained the extensive Lernean marshes, and thus dried up this abundant source of pestiferous emanations.

*Heat* and *moisture* are indispensable to the generation of *koino-miasmata*; without these, no decomposition can take place, and without decomposition no deleterious agents can be generated from dead vegetable and animal substances. In latitudes where the atmospheric temperature

seldom rises above 60°, the diseases which arise from this agent occur but very rarely, and perhaps, never in an *epidemic* manner. The Lithuanian marshes of Russia do not render the surrounding districts insalubrious. It would seem, indeed, from a long series of observations, that *kvins-mia-mata* are seldom evolved, to a degree sufficiently copious or active to create extensive disease, so long as the temperature of the air does not rise above 80° of Fahrenheit. It is, however, not necessary that moisture should be present in great *abundance* for the production of miasmata. Indeed, ground completely covered with water, send forth but very little of this deleterious effluvia, however favorable the temperature, and other circumstances may be. Hence, copious and continued rains, by inundating marshy soil, render such localities comparatively salubrious. Ferguson was led to infer, from his observations on this point, that miasmata were extricated wholly independent of the humid decay or decomposition of vegetable and animal matter, and apparently without the agency of humidity. He asserts that this aeriform poison is never extricated, in any considerable quantity, until the moisture of the soil is so far dissipated as to leave the ground in the last stage of the drying process. This, however, is decidedly contradicted by almost universal experience. In proof of his opinion, among other observations, he says: "In the months of June and July our army marched through the singularly dry, rocky, and elevated country on the confines of Portugal, the weather having been previously so hot, for several weeks, as to dry up the mountain streams. In some of the hilly ravines, that had lately been water-courses, several regiments took up their bivouac, *for the sake of being near the stagnant pools* of water that were still left among the rocks. Many men were seized with intermitting fever." From this, and similar facts, he thinks himself warranted to conclude, that the humid decay of vegetable and animal matter has no immediate agency in the production of miasmata, and that moisture, particularly, is not essential. But "half dried ravines and stagnant pools of water," are surely no evidence of a want of humidity, and present, one should think, precisely the conditions most favorable to the emission of miasmata from vegetable and animal decomposition.

It may be observed, that in every instance adduced by Dr. Ferguson, in proof, that the extrication of miasmata does not depend on the *humid* decay of vegetable and animal matter, the soil from which the miasmata was emitted had been previously thoroughly saturated with water, during the rainy season, and moisture must, therefore have existed in sufficient abundance, a short distance under the *surface* of the soil, however parched the latter may have been. Under such circumstances, miasmata might be abundantly sent forth, without any obvious humidity and vegetable decomposition on the surface; for the vegetable and animal remains, collected during the rainy season, must have been gradually decomposed during the drying process, and left, in part, at least, mingled with the portions of the soil on the surface. In this state, then, the slow evaporation of the humidity under the surface, in passing up into the air, would dissolve the putrid but dry particles of animal and vegetable remains, and convey them in the form of an effluvia into the circumbient atmosphere.



That a considerable degree of humidity is especially favorable, and even essential, to the evolution of miasmata, is evident from the circumstance that marshes, stagnant pools, and the oozy shores of rivers, have, in all ages, and in all countries, been found the most insalubrious portions of the earth during the hot seasons.

As to the variety of *soil* most favorable to the productions of miasmata, we possess no very definite or certain information. It has been asserted, that an argillaceous soil is most favorable for the extrication of this effluvium; but its tendency in this way, appears to depend solely on its greater compactness, in consequence of which, it retains humidity much longer than other soils, and thus favors the formation of marshes, and of standing pools of water.

It is not, however, from marshy or low and humid soils alone, that this morbid effluvium is disengaged; for, there is scarcely a spot of this earth's surface to be found, that is not covered or imbued with both vegetable and animal remains in a state of decomposition, and ready to afford pabulum for the sun's rays, with or without humidity to extricate *malaria*. Wherever vegetable matter meets with sufficient heat and moisture to cause it to enter into humid decomposition, there miasmata will be evolved, and in our own climate there are very few, if any, situations, that do not at times furnish all these conditions, to a greater or less extent.

A mixture of *fresh* and *salt* water in marshes, appears to enhance the copiousness and virulence of miasmata to a very obvious degree. It is a singular fact, that the water of the sea is much more apt to enter into putrefactive decomposition than fresh water; and this, no doubt, depends on the great quantity of organic matter which it contains. M. Monfalcon mentions some interesting examples illustrative of this fact. The extensive pool of Valdec, in the south of France, is quite saline. Not more than a few rods from it is a large pool of fresh water called *Engrenier*. When the waters of these two pools rise, and run into each other, as they occasionally do, much sickness soon occurs throughout the adjoining parts. In the vicinity of Lukes, on the south of the Ligurian Appenines, there is a large marshy plain accessible to the high tides of the ocean. The neighboring districts were almost uninhabitable from the pestilential effluvia which emanated from this marsh until the waters of the sea were separated from the sweet water of the marsh by means of sluices and hydraulic works, when it became healthy, and the population increased rapidly.

Of the nature of *koino-miasmata*, we possess, as yet, no certain knowledge. Examined chemically, the air of the most pestiferous marshes is found to differ in nothing from the purest and most salubrious air. According to the experiments of Professor Julia, of Lyons, it would appear, that

1. The deleterious influence of *koino-miasmata*, depends on particles of putrid animal or vegetable matter dissolved and suspended in aqueous vapor.
2. The air of marshes does not differ from atmospheric air in any of the principles which chemical analysis can detect.

3. None of the gases disengaged from bodies in a state of putrefaction, exhibit themselves in a sensible quantity.
4. The disorders caused by *koino-miasmata*, are not in any degree dependent on the predominance of azote, of carburetted hydrogen, of ammonia, or of nitrous oxide, &c. in the air.

That *koino-miasmata* consists in particles of putrid vegetable and animal matter, dissolved in aqueous vapor, receives considerable support from the experiments of Gaspard and Magendie on the effects of putrid exhalations on animals. Magendie found, that on exposing different animals to the exhalations of putrid animal matter, affections were produced analogous to those which are known to occur in man from the influence of pestilential miasmata. It is not improbable, therefore, that such putrid materials, suspended in vapor, constitute the deleterious principle of miasmata of this kind; and it may be reasonably presumed, that the different modifications of disease produced by this agent, in different localities, depend in a great degree on the different degrees of concentration, as well as on the particular character and proportion of the substances from whose decomposition the putrid miasmal particles are derived. It can hardly be doubted, that the relative proportions of animal and vegetable matter which may enter into miasmal exhalations, will determine the violence of their influence, and modify its results on the system. Plausible as these sentiments may be, it should not be forgotten that they are founded on no *certain* data, and that we may, after all, as yet, be remote from the truth in relation to this subject.

Whatever may be our views concerning the essential nature of *koino-miasma*, observation has made us acquainted with certain of its physical qualities, as well as with its general effects on the human system, and which is perhaps all that it imports us, in a practical relation especially to know.

*Koino-miasmata* possess a greater specific gravity than atmospheric air. They cannot, consequently ascend into the air without being attached to and carried up by lighter bodies: and these vehicles consist, without doubt, of aqueous vapors. Hence, persons sleeping in elevated chambers, are much less apt to contract miasmal diseases than such as are lodged on the ground floor. Drs. Blanc and Lempriere, in their report to the Secretary of War, concerning the Walcheren fever, observe: On no account should ground floors be used to sleep on: the more lofty the buildings the better, for the tenants of the upper stories not only enjoy the best health, but, when taken ill, have the disease in the mildest form. And hence, too, the greater salubrity of hills, and very elevated parts, than the adjoining low grounds. The ancient Romans appear to have been fully aware of this fact, and they availed themselves of it by almost uniformly selecting very elevated positions, or hills, for the sites of their towns. It is true, that some very remarkable exceptions have occurred to this fact. Bancroft mentions the great mortality which has repeatedly been observed on the top of Montefortunè, at St. Lucie: and on the Hospital and Richmond hills, at Grenada, while the surrounding low situations were comparatively salubrious. Dr. O'Hallaran, in his account of the yellow fever of the south and east coasts of Spain, mentions similar examples of the great prevalence of miasmal diseases

on very elevated situations, whilst the surrounding marshy grounds were but little infested with this deleterious effluvia. He refers particularly to *Monjuí*, a hill 700 feet high, overlooking Barcelona, the air of which, he says, is so deleterious, that it was found necessary to relieve the stationary guard every eight or ten days; and, he adds, that the injurious influence of the exhalations arising from the swamps below manifested itself more conspicuously upon the summit of the hill than in the subjacent parts. Dr. Blane, who mentions similar facts, explains them by supposing that the vapors formed on the low and swampy grounds ascend, and, with the miasmata which they hold in solution, pass over the lower situations and impinge and settle on the neighboring hills. It is, indeed, by no means uncommon to see fogs, which rise out of the low grounds, ascend and hover over the tops of the neighboring mountains, and it may well be presumed, that these fogs will convey along with them a large portion of the miasmata which may be extricated from the same grounds whence the aqueous vapors arise.

*Koino-miasmata* is abundantly precipitated to the surface of the earth during the night, and more especially during the first hours after the setting, and shortly before the rising of the sun. Hence, in part, the greater liability of contracting miasmatic diseases from exposure between the setting and the rising of the sun, than after the sun is considerably above the horizon. The most dangerous period in the twenty-four hours of the day, is "that which accompanies the setting and that which immediately precedes the rising of the sun, and the least critical time is when the sun is at its highest point above the horizon." In these facts we have strong evidence of the correctness of an observation already made—namely, that the miasma is united with and suspended in the air by aqueous vapor, which, falling in the form of dew, carries down along with it the deleterious miasmatic particles.

*Koino-miasmata* may be arrested in its progress or passage from its source to other parts, by whatever is capable of impeding and intercepting the progress of aqueous vapor. Thus the interposition of a dense forest, of a high wall, or fence, of a chain of elevated hills, in short, of any mechanical obstacle of this kind, has been known to protect the inhabitants of villages, of camps, of convents, and of single habitations, from the pestiferous influence of neighboring marshes. De Lisle relates several very remarkable facts illustrative of this observation. A convent situated on Mount Argental, near the village of St. Stephano, was, for a long time, remarkable for its salubrity, until the trees by which it was surrounded were cut down, when it became extremely sickly. From the same circumstance, miasmata are sometimes confined by obstacles of this kind, and so accumulated in particular localities, as to acquire a high degree of concentration and power. Marshes surrounded with dense forests, in warm climates, have often given unequivocal illustration of this fact. The same effect, in causing a stagnation and accumulation of miasmata, has been observed in most situations environed by high hills. In some of the valleys in the mountainous regions of South America, malaria are thus accumulated to a degree which gives them the utmost virulency, while the surrounding elevated parts are entirely free from miasmatic diseases. This is remarkably the



case of *Acapulco*, which, as Dr. Macculloch observes, may be regarded as a striking instance of the imprisonment of malaria by hills. It is in this way, too, says this writer, that we may explain the peculiar virulence of jungles and pine swamps, and even of woods every where.

Considerable diversity of opinion has been expressed as to the distance to which miasmata may be diffused from their source, in a state of sufficient concentration, to produce fever. In a quiescent state of the atmosphere, the sphere of activity is, probably, much more limited than has been generally supposed. Bancroft thinks, that they are rarely carried beyond a quarter of a mile, even by unobstructed currents of air, in a state sufficiently active to produce fever; and he adduces several observations which seem to confirm this opinion. Unquestionably, however, currents of air passing over marshes, often convey the miasmata, which arise from them, to a very considerable distance—sometimes several miles, in a state of concentration fully adequate to the production of their usual deleterious effects on the human system. “In Italy,” says Dr. Macculloch, “the poisonous exhalations of the lake Agnau reach as far as the convent of Camaldoli, situated on a high hill, at the distance of three miles, proving that thus far, at least, malaria can be conveyed by the winds.” The account of the thirty Roman noblemen mentioned by Lancisci, is an interesting and striking illustration of this fact. They were sailing near the mouth of the Tiber, on a party of pleasure. Suddenly the wind shifted, and blew over the putrid marshes. Twenty-nine out of the thirty were soon seized with intermitting fever. The effects, often truly frightful, of the *harmattan*, after becoming loaded with the pestilential effluvia of the swamps of Benin, afford also a strong illustration of this fact. From this circumstance, it not unfrequently happens, that those who reside on the leeward margin of marshes, or sluggish streams, are extremely harassed by miasmal diseases—while those who sojourn on the windward side, remain almost entirely exempt from these afflictions. Dr. Macculloch relates an instance from his own observation, which strikingly illustrates this fact. “An army was encamped in a very pestiferous plain, yet the health of the men did not suffer, because, being near the shore, the sea-breezes predominating at that season, swept back the malaria into the interior country. From some cause, the encampment was transferred to another point, without recollecting that the change of the regular winds was approaching. They did commence—sweeping in a new direction across the plain; and, within a few days, many thousand men were disabled or destroyed.”

During the autumns of 1820, '21, '23, and '24, there was scarcely a family between the eastern shore of the Schuylkill and the city of Philadelphia, that did not suffer from intermitting and remitting fevers; whilst among the inhabitants of the western shore, and of the high grounds a short distance back, there was, comparatively but little sickness. The cause of this difference manifestly consisted in the course of the wind, which, during the periods here mentioned, as indeed is generally the case, blew almost continually from the west, northwest, or southwest; and thus swept the miasma, which was generated along the oozy borders of the Schuylkill, in an eastern direction.

Violent storms, and copious showers of rain, tend powerfully to free the atmosphere from *koino-miasmata*. The former violently disperses them, and the latter sweeps or washes them down to the surface of the earth. Nothing is more common than to find miasmatic epidemics to remit immediately after copious floods of rain or violent storms.

A humid air is a much better vehicle for the transportation of miasmatic exhalations, than a dry one. The particles of the miasmatic poison attach themselves to the humidity of the air, and are thereby carried along by currents of wind. It is to be remarked, however, that, although atmospheric humidity appears to favor the dissipation and action of miasmata, yet observation would seem to show that when these effluvia pass over a surface of water, they become absorbed, or in some way lost. This circumstance may, in part, account for the short distance assigned by Bancroft to the dissemination of miasmata from their source; for in all the examples which he adduces in support of this opinion, the miasmata were conveyed over bodies of water.

II. IDIO-MIASMATA.—This variety of miasmata is generated by the decomposition of the matter of perspiration, and the other excretions of the animal body; and hence it most frequently occurs in the confined and crowded hovels of the poor, in crowded jails, ships, hospitals, and wherever many individuals are confined in apartments not duly ventilated. From an inability to procure separate dwellings, the poor are generally obliged to take up with small apartments, into which two or three families are often crowded; and in order to save fuel, and indeed frequently from the total want of fuel, every access of the external cold air is carefully cut off. Add to this the filth and want of proper changes of clothing almost inseparable from extreme poverty, and you have a combination of circumstances peculiarly calculated to generate a miasma, by the putrefactive decomposition of the animal exhalations with which the air and every article of clothing in such apartments must be saturated. It is chiefly during the *cold season of winter* that this variety of miasmata is generated. When the weather is warm, the air of crowded and filthy apartments is constantly renewed by the doors and windows being kept open, and the accumulation and stagnation of the animal exhalations thereby prevented. Dr. Smith observes, that this miasm is especially apt to be generated in the apartments of the sick, particularly “of those who are laboring under the typhus state of fever.” It may be observed, however, that the exhalations which emanate from the body in a *state of disease* and which possess the power of producing the same disease as that, under whose influence they are evolved, cannot, with strict propriety, be ranked with the present class of miasmatic poisons. They belong to the *contagions*. I would restrict the term *idio-miasma* to those morbid *effluvia*, which are generated by the *decomposition* of the animal secretions, whether formed in a state of health or disease, and to the ordinary exhalations from the body, when accumulated in such a manner as to deteriorate the atmosphere of confined rooms, if these be really capable in themselves, and without decomposition of exciting fevers.

*Idio-miasmata* are always quite limited in the sphere of their influence. Beyond the room or habitation in which they are generated their

operation cannot extend: unless, indeed, they are absorbed or adhere to articles of clothing, and are conveyed abroad in a state of sufficient activity to act on the human system. Whenever fever is found to spread from a source of idio-miasmata, it is in consequence, doubtless, of the generation of a new contagious miasm by the disease, which is produced in the first instance by the idio-miasmatic poison. I am well aware that this opinion involves what has been declared a manifest inconsistency—namely, the origination of a *contagious* disease by a *common* or general exciting cause. All such objections, founded merely on speculative inferences, may be met by *facts* which *must stand good*, however irreconcilable they may appear to be with the dogmas of philosophy, or with admitted principles. It is a *fact*, for instance, that typhus may be originated by the miasm resulting from the decomposition of the secretions or exhalations of even healthy individuals, crowded and confined a long time in narrow and unventilated apartments. And that, although not necessarily a contagious malady, typhus may, under peculiar circumstances, generate a specific virus which is capable of exciting the same disease in others, is a fact supported by a mass of testimony which cannot be reasonably rejected. “There are few physicians,” says one of the most eminent medical writers of the present day, “who believe that epidemic or endemic fevers *arise* from specific contagion, though facts daily teach us that typhus, yellow fever, dysentery, &c. occasionally, and under particular circumstances *give out* a something, (call it what you please) which produces a similar disease in the healthy stander-by, who happens to come within its range. If we may venture to prognosticate, we would anticipate that this *will be*, as it assuredly *now is*, the more general opinion among *practitioners*.”

From the circumstance of this variety of miasmatic poison “becoming imnoxious when diffused in the atmosphere, even a few feet beyond the apartments in which it is generated,” none of the forms of disease, which it is capable of producing, are apt to occur epidemically. Typhus, nevertheless, has been known to occur in a manner well entitled to the name of epidemic. The late widely spread epidemic of Ireland was surely strongly characterized in its progress and extent of diffusion by every feature which can give to diseases the character of an *epidemic*. Though engendered and nursed in the lap of wretchedness and poverty, it did not, in its desolating sway, fall exclusively upon those who were suffering under the distressing privations of penury. Its fatal visitations were abundantly made to the ample and airy habitations of plenty and comfort, and almost—

——æquo pulsat pede pauperum tabernas  
Regumque turres.

The question here occurs: If “idio-miasmata becomes imnoxious by being diffused in the atmosphere even a few feet beyond the apartments in which it is engendered,” how can typhus, which is manifestly originated by this effluviū, become epidemic, or be produced in large and well ventilated dwellings remote from the usual sources of this miasm? Is it by the idio-miasmata attaching itself to the clothes of individuals, or to other substances by which it may be conveyed from one to another

place? If this be admitted, then *idio-miasma* must possess the character of a contagion. Is it not more probable, that in the majority of instances of this kind, the disease is propagated by a specific virus, generated by morbid secretion, and conveyed as other contagions of an æriform character are conveyed? It does not seem probable that *idio-miasmata* can be disseminated by fomites. If it can be so disseminated, it must possess all the characteristics of a veritable contagion.

## OF THE RELATIONS OF MIASMATA TO THE ANIMAL SYSTEM, &c.

Having given an account of the physical character and conditions under which the two infections *effluvia*, *koino* and *idio-miasmata*, are evolved, I proceed to the consideration of their relations, as morbid agents with the human system, as well as with each other. Upon this subject I stand largely indebted to the ingenious and truly philosophical work of Professor Smith of New York; for, although I have long since entertained similar views in relation to the combined agency of these miasmatal poisons in the production of fevers, yet the enlarged, systematic, and precise views taken of this subject by Dr. Smith, have afforded me some new and interesting insights into this part of the etiology of fevers.

The class of fevers arising from *koino-miasmata* are very distinct in their general character, and we may presume, in their essential natures, from those which are the result of *idio-miasmata*. The former give rise to intermittent, remittent and bilious fevers; and the latter miasm is the source of *typhus*, and the *low nervous fevers* of former writers.

The deleterious power of *koino-miasmata* is manifested not only by the violent and fatal fevers which they are known to produce so abundantly, but also by the more slow inroads they make on the physical and moral condition of those unfortunate beings, who are habitually exposed to their influence. The indigenous inhabitants of marshy districts, in warm climates, present an aspect of suffering and wretchedness from this cause, which is well calculated to draw forth the commiseration of those who are more fortunately located. Continually exposed to the deleterious influence of these baneful exhalations, man, in such situations, exhibits a state of feebleness and early decrepitude, strongly indicative of a broken-down constitution, and deep, irremediable chronic disease. So deep and pervading, indeed, are the effects of malaria on the human system, that it never fails to debase, in a remarkable manner, both the physical and moral constitution of a people, who through successive generations, reside in situations abundant in perennial sources of miasmata. Not only does the stature and symmetry of the body suffer conspicuous deterioration, but the mind becomes torpid, feeble, pusillanimous, and the moral sentiments debased.

But while such chronic and constitutional effects are wrought by the habitual endurance of *koino-miasmata*, the system loses its susceptibility of being excited into those violent commotions of febrile action, which this agent is so apt to produce in individuals less accustomed to its impressions. The natives of marshy districts are comparatively much more rarely affected with the higher grades of miasmatal fevers, than those who are only occasionally brought within the sphere of its influence.



In the former the agency of this poison proceeds as it were by a slow and concealed combustion, whilst in those who are not accustomed to its influence, its effects burst out in a raging and rapidly consuming flame.

There can be but little doubt that *koïno-miasmata* varies in its powers, and often very considerably, according to various circumstances in point of locality, and the relative proportions of the animal and vegetable matter which supply the materials for its composition. Dr. James Johnson, whose authority I am always disposed to respect, has expressed his belief in the occurrence of such diversities in the peculiar morbid powers of this agent. "The fever of Batavia," he observes, "differs from the fever of Walcheren—the fever of Antigua, from the fevers of the Ganges—and all these differ materially from the plague of the Levant." That certain countries and localities have an especial tendency "to generate one mode or variety of fever; while in other situations, some other variety as exclusively prevails," is an observation founded on abundant testimony of unquestionable authority. In Germany, intermittents almost universally assume the tertian type; in Italy, the quotidian type greatly predominates; and in Hungary, paludal fevers are peculiarly apt to be attended with petechiæ. "The fevers of the Pontine marshes are noted for the shortness of their intermissions; whilst Holland is not less remarkable for the variety of the types than the slow progress of the fevers. In Spain, as in Africa, the West Indies, and the southern parts of the United States, the black vomit and the yellowness of the skin are similarly characteristic symptoms." Even in localities situated within a short distance from each other, the most remarkable difference occurs in the character of the fevers which they engender. Thus, "the fevers of Walcheren," says Dr. Macculloch, "differ materially from those of Bresken on the opposite shore of the Scheldt; and in France those of Rochefort differ as completely from those of the Lyonnais."

It cannot be presumed that the relative proportions of animal and vegetable matter should be the same in different localities, and equally improbable is it that the same *kinds* of these materials should be present in the different situation where miasmata are generated. There must be great diversity in both these respects, and a corresponding diversity in the essential morbid qualities of the miasmata evolved from them. I have already mentioned the experiments of Magendie in relation to the effects of putrid animal substances on the animal system. From these it appears, that "different *kinds* of flesh, when in a putrid state, produce different effects on the animal economy," and it is, therefore, reasonable to conclude that miasmata will differ in their powers according to the greater or less *proportion* and *kinds* of the animal and vegetable matters concerned in their production.

The influence of *koïno-miasmata* on the human system, like that of other general causes of disease, is much under the control of the physiological state of the animal economy, of idiosyncrasy, of temperament, predisposition, and of accidental external causes. Thus of a number of individuals exposed for a certain time to the same *miasm*, some may become affected with intermitting fever, others with mild remittent

fever, some with malignant bilious fever, some with bilious colic, some with dysentery, and others, perhaps, will escape the disease entirely.

The influence of high atmospheric temperature in predisposing the system to the deleterious impressions of miasma is, probably, very considerable. Long continued exposure to solar heat appears to have an especial tendency to affect the biliary organs, and to render the system generally irritable. These conditions, it may be presumed, are peculiarly favorable to the morbid influence of malaria; and it is not improbable that they sometimes contribute, in a considerable degree, to render the miasmatic fevers of intertropical or hot climates, so peculiarly violent and dangerous. Dr. Macculloch dwells much on "errors of diet" as a predisposing cause of the miasmatic fevers. It would appear, that the free use of animal food, in tropical climates, is peculiarly calculated to favor the morbid influence of miasmata; and this is said to be especially the case when the animal food is taken "in the middle of the day, or frequently in one day." On examining Niebuhr's narrative, says Dr. Macculloch, "it is most apparent that the deaths of his companions were the consequences of gross feeding." "On this question," says the same writer, "there can perhaps be no better evidence than the opinions and practices of the intertropical nations themselves, among the mass of whom this subject seems well understood; while in many countries it is a caution actually often given to Europeans by the natives, though most generally neglected by them. It is, probably, from long experience, in some measure, of its advantages, as well as from more obvious causes, that a vegetable diet is so general throughout the aborigines of the torrid climates; while it is doubtless from principle, also, that among the people of Africa, to the northward, at least, the sole or the principal meal is supper."

The class of diseases produced by koino-miasmata, if we take into view their various modifications, is by no means limited in its range. The most simple form of disease arising from this cause is the intermittent fever. In proportion as this febrile effluvium increases in potency, so does it produce fevers of a higher and more violent grade. The range of activity of this miasma extends from the simple tertian of the temperate latitudes to the malignant and fatal plague of the East, or the scarcely less fatal bilious fever of Batavia.

Besides general fevers—assuming an endless diversity of character in different seasons and climates, koino-miasmata produce, also, various other affections, both local and general. Dysentery, cholera, and diarrhoea, are enumerated among the maladies produced by malaria. It may be doubted, however, whether miasmata, by itself, without the co-operation of other causes, has any particular tendency to excite these affections. I apprehend, that in many instances occurring in malarious districts, as elsewhere, atmospheric vicissitudes, or cold, exerts no small degree of influence in determining the disease upon the alimentary canal. During the autumn of 1814, one-fourth, perhaps, of the men of four regiments encamped near Baltimore, were affected with intermittent and remitting fever in the month of September. The weather was remarkably warm, equable and dry. The months of October and November, however, were rainy, extremely variable in temperature, and



the majority of the men, who were previously lodged in covered ropewalks and houses, were now encamped in tents. A week after the rainy and cold weather set in, dysentery and diarrhoea began to appear abundantly, and in the course of three weeks more, there were but very few cases of intermitting or remitting fever, but more than eight hundred cases of dysentery. Nevertheless, the capability of miasmata of producing these forms of intestinal disease by its own unaided powers, is not to be questioned, although it is, I think, equally evident, that the co-operation of sudden changes of atmospheric temperature, or cold, is especially calculated to enhance the tendency of the miasmata to occasion these diseases. From these remarks, cholera ought to be excepted, for the cholera of India, at least, is most undoubtedly the product of a miasmatic agent.

Dr. Macculloch mentions *tic douloureux* as a common consequence of the influence of miasmata—more especially in Italy; and the occurrence of periodical hemicrania, from this cause, is by no means infrequent, even in our own climates. In truth, there is scarcely a malady that may not be produced or stimulated by the operation of malaria on the human system.

The period which intervenes between the reception of *koino-miasmata* and the first manifestation of its influence on the human body, is extremely various. Of many persons exposed to it at the same time, some may be immediately affected, others in a few days, some not until several weeks have passed, whilst others may remain free from its effects a still longer time.

As the powers of *koino-miasmata* most probably vary considerably in different countries and localities, it may be inferred, as has already been observed, that the fevers which they produce are impressed with a corresponding diversity in their character; an observation would seem to confirm this inference. Dr. Smith thinks, that whatever external or general diversities may occur in fevers produced by this miasma, "their pathology or essential nature is every where the same." This is highly probable; for the diversities in question would seem to depend more on the mere grade of violence, local affections, and general course of these fevers, than on any radical difference in their essential pathological conditions. Upon this point, however, it becomes us to speak with diffidence, as this question cannot be solved by mere closet inferences and reasonings, but by close observation and careful experience, in relation to these fevers as they occur in various countries, climates, and localities.

How far a mixture, or the combined agency of *koino* and *idio-miasmata*, may operate in producing novel or anomalous varieties of fever, it is impossible to say; but that such a combination does sometimes occur, and give rise to fevers of a peculiar or mixed character, will scarcely be doubted by any one who has given due attention to this interesting subject. Professor Smith, to whose work I have already so frequently referred, has given this subject a comprehensive and minute consideration, and to whom, indeed, the credit is due for introducing this interesting point of etiology to the notice of the profession. "Let us suppose," says Dr. Smith, "the circumstances in which typhus originates, to occur in summer, such as the crowding of individuals into small apartments,

badly ventilated, and rendered offensive by personal and domestic filth. These causes would obviously produce typhus in its ordinary form. But suppose there exist at the same time, those exhalations which occasion plague and yellow fever, or intermittent and remittent fevers. Under such circumstances, we should not expect to see any one of those diseases fully and distinctly formed, but a disease of a novel or modified character." There exists no doubt in my mind, of the correctness of Dr. Smith's observation, that the late Banker Street fever in New York, as well as the peculiar fever which prevailed among the blacks in this city, a few years ago, was engendered by the united influence of these two miasmatal poisons. I once had a striking illustration of the anomalous and fatal character which the united action of *koino* and *idio-miasmata* are apt to impart to fever. During the fall of 1814, ten men affected with mild remitting fever, were lodged in a room of confined dimensions, and as the weather was cold, the room was kept pretty warm by fire, and the doors and windows as little opened as was admissible. The adjoining room was exceedingly crowded with invalids, and but little attention paid to cleanliness and ventilation. In a short time several cases of fatal typhus occurred in this room. Soon after this, the patients who were affected with intermitting fever in the next room, manifested new and more alarming symptoms; blood began to ooze from their gums; extreme tenderness of the epigastrium occurred; the intellect was but little disturbed; the eyes were dull, watery, and staring; the temperature of the skin and the pulse nearly natural; the animal powers so little prostrated, that one of the men died a few minutes after he had been sitting up with his back leaned against the wall of the room. They were all immediately removed, and all except one died in a few days. There can be no doubt, that this peculiar modification of febrile disease was the result of the impressions of *idio-miasmata* (engendered in the house,) made on systems already under the morbid influence of *koino-miasmata*.

### CONTAGION.

By a contagion is understood a deleterious agent secreted by the animal body in a state of disease, which, when brought to act on a healthy individual, will produce a disease specifically similar to the one from which it derives its origin. Contagions occur under two distinct forms, and may therefore be divided into two varieties: viz: 1. Those which consist of a *palpable matter* or *virus*; and, 2. Those which consist of an *imperceptible effluvium*. The *chronic* contagious maladies are propagated exclusively by a *palpable virus*, and consequently always by actual contact. Those *acute* contagious diseases which are not attended by a specific local affection, or an exantheme, are, on the other hand, exclusively propagated by a morbid effluvium, and by consequence, solely through the medium of the atmosphere. Those *acute* diseases, which are essentially connected with a *specific local affection*, or an *exantheme*, are communicated both by a palpable virus, and by an imperceptible effluvium, and consequently both by actual contact and through the medium of the atmosphere. We perceive, therefore, that of the extremes of a purely *local*, and a purely *general* malady, there is,

on the one hand, communication of the disease solely by a *palpable* matter, and, on the other, by *effluvia* only; and that where the *local* and the *general* affections meet in the same disease, or essential concomitants, (in the exanthemata) there the two modes of propagation also obtain.

It must be observed, however, that though in a practical point of view we may properly adopt the distinctions between contagious communicated by *contact* and through the *medium of the atmosphere*, yet, in reality, an actual contact must, necessarily, always occur between the contagion and the individual, before it can possibly produce disease, whether the contagion be a palpable matter, or an imperceptible miasm. The only material difference consists in the mode in which this contact is effected.

One of the most remarkable peculiarities of contagious diseases, is their inherent and undeviating tendency to preserve their essential individuality under whatever circumstances of age, sex, constitution, temperament, modes of living, climate, and place, they may occur. Thus, the small-pox of the present day, differs in no essential circumstance from the same disease, as it was observed and described by Rhazes more than eight centuries ago; and the itch has changed in nothing since the time of Galen. Any certain contagion can, so far as we know, produce only one disease; and if the system has become insusceptible of such disease, its peculiar cause is no longer a morbid agent in relation to that system.

The laws of the acute contagious diseases differ entirely from those which govern the rise, progress and declension of the chronic contagious affections. The former observe the utmost regularity in all these respects. The rise, advancement and decline, in short, the whole series of essential phenomena, are governed by laws as steadfast as those which regulate the motions of the planets. The latter class of diseases, on the contrary, are extremely irregular in their course, having no definitive period of duration, nor established order and duration of the successive phenomena of their course.

The power which the acute contagious diseases have of destroying the susceptibility of the human system, to the subsequent influence of their specific causes, constitutes one of the most remarkable and mysterious characteristics of this class of maladies. In this respect, they differ as far from the *chronic* affections of this kind, as they do from the febrile diseases produced by general or non-contagious causes. In consequence of this law of *acute* contagious diseases, no malady of this kind can ever relapse during the period of convalescence.

Considerable diversity of sentiment has been expressed in relation to the distance to which contagious miasmata may be dispersed from their source, in a state of sufficient activity to generate disease. That their sphere of activity is very limited, however, has been abundantly demonstrated, both by direct experiment and observation. The experiments of Dr. O. Ryan, professor of physic in the college of Lyons, prove that the contagious miasm of small-pox does not extend more than a few feet beyond its source. The most malignant contagious are rendered inert and harmless by being diffused in the atmosphere, and even by diffusion in the air of a well ventilated apartment. Ventilation diminishes the activity of contagious effluvia, simply by diffusing the miasm in a large

portion of atmospheric air, in consequence of which those who become exposed to it, receive it in weak and inefficient doses.

Contagions are perpetuated and conveyed to great distances from their source, by being absorbed by, and attached to, various substances, such as clothing, furniture, bedding, &c., with which they are often transported even across the ocean. Animal substances, such as wool, hair, and articles manufactured from them are said to retain contagious matter with the greatest tenacity. The more the substances which have become saturated with contagion are kept from the access of the open air, the more virulent and active will be its powers when it is brought to act upon the human system. Thus, articles of clothing, after having been impregnated with contagious virus, will retain the power of infecting much longer, and in much greater intensity, if they are kept confined in close rooms, or locked up in chests or closets, than when they are freely exposed to the open air. It is by articles of this kind, locked up in trunks, that the small-pox, and other contagious maladies, have been conveyed to distant parts of the world in ships, although no person on board may have been sick with the disease during the voyage. The articles which are thus imbued with contagious virus, are called *fomites*. It was the opinion of Cullen, that contagions are more powerful when they are thus lodged in fomites, than when they arise immediately from the human body, or when in a separate state. The same opinion is expressed by Dr. Lind.

The influence which peculiar atmospheric constitutions have on the activity of contagions, and on their tendency to dissemination, is a subject as interesting as it is inscrutable. The most careless observation is sufficient to convince any one, that there exists in the varying constitutional, or perhaps accidental conditions of the atmosphere, a powerful modifying principle in relation to the powers of contagious agents. At times, it would seem impossible for a contagious disease to extend the sphere of its ravages; for, although sporadic cases may occur here and there, yet no neglect in relation to proper seclusion, will enable the disease to assume an epidemic or endemic character. During other periods, on the contrary, the accidental importation of *fomites*, or the occurrence of a case of contagious disease, acts like a spark of fire thrown among combustible materials, and speedily spreads disease extensively among the people. The same powerful atmospheric influence shows itself in the diversity of character, in relation to the grade of violence, malignity, and general diathesis, which the same malady is observed to assume at different periods of its prevalence. That these things depend on some modifying agency of the atmosphere, there can exist but little doubt. What this condition of the atmosphere consists in, it seems impossible to ascertain; it is probable, however, that it has no immediate connection with either the temperature or the hygrometrical state of the air; for, with the exception of typhus, which is manifestly favored by cold weather, the contagious diseases of every kind prevail equally during the heat of the summer and the cold of the winter. The mode in which contagions are either favored or retarded in their progress by atmospheric constitutions, consists, probably, not in any influence which they may exert immediately on the powers of the contagion, but rather,



perhaps, in their tendency to modify the human constitution, so as at one time to render it peculiarly susceptible of the influence of the contagion, and at another to diminish, or for a time to annul, the natural predisposition to its operation.

Of the primary source of contagion we know but very little. It is probable that each contagious disease was at first developed, independent of contagion, by the accidental concurrence of various circumstances, which, in the infinite series of such contingencies, may not again occur for many centuries. That a disease may be originated by the concurrence of general causes, without the agency of a contagion, and which may afterwards communicate itself to others, by a specific virus of its own elaboration, we have a familiar example both in typhus fever and in itch. There is reason to believe, indeed, that various contagious have been thus produced, which have long since passed away from the face of the earth; and it is not an idle conjecture to say, that new contagious may hereafter arise, which, after having exhausted their power on mankind, may again disappear forever, or until a similar concurrence of causes, which at first evolved the contagion, again occurs.

It is an interesting fact, that contagious diseases sometimes originate in the lower orders of animals, and are afterwards communicated to the human species. Hydrophobia and the vaccine disease are familiar examples of this kind. Professor Remur has published some observations which go to show that other diseases, such as the virulent coryza of horses, the plica of long-haired animals, and the gangrenous inflammation of the spleen which occurs in cows, may be communicated by immediate contact to man.

The following rules have been recommended for preventing the spread of contagious maladies to those who are obliged to approach patients laboring under diseases of this kind.

1. "The chamber in which the patient lies, must be kept *clean and freely ventilated*. No bed curtains must be allowed to be drawn around the patient."
2. "Dirty clothes, utensils, &c., should be often changed and immediately immersed in cold water, and washed clean when taken out."
3. "The discharges from the patient must be instantly removed; and the floor around the patient should be rubbed clean once a day with a wet cloth."
4. "Avoid the current of the patient's breath, as well as the effluvia which ascend from his body, and from the evacuations."
5. "Visitors ought not to go into the patient's chamber with an empty stomach; and in doubtful circumstances, on coming out they should blow from the nose and spit from the mouth any contagious poison which may adhere to these passages."

Although it is quite certain that contagious will adhere to and imbue various substances, especially clothing, so as afterwards to reproduce the same disease, at a distance from their source, and often a long time after they had been generated; yet it seems to be well ascertained, that such substances, (clothing) can rarely be so greatly imbued with contagion by a slight and transient exposure to the poison, as to be capable, after



wards, of producing disease in the healthy. The clothes of transient visitors, for instance, will scarcely ever imbibe sufficient contagion to communicate the disease to others. Dr. Clark affirms, "that in eighteen years of medical practice, he never communicated the contagion of small-pox nor of scarlet fever to any one, although he had frequently, on the same day, visited many patients sick with these diseases, and in their most malignant forms."

Mere ventilation is inadequate to destroy the contagion deposited in fomites. To effect this important object, a great variety of means, such as exposing them to various vapors and fumes, have been devised. Without enumerating the different disinfecting agents which have been successively brought forward and again rejected, it will be sufficient to mention those which experience has shown to possess active powers in this respect, and which are now relied on as unquestionable disinfecting agents. *The nitrous acid vapors* have been much employed for disinfecting ships and houses in which contagion has been found to exist. Such was the evidence brought forward of the efficacy of the nitrous acid fumes in purifying infected places and fomites, that the British parliament voted a national donation of five thousand pounds to Dr. Carmichael Smith for the discovery. This vapor is readily obtained by mixing with powdered nitre, in a cup, a little of sulphuric acid, and applying gentle heat with a lamp.

At present, however, chlorine, and the chlorides of lime and soda, are regarded as decidedly the best disinfecting agents we possess. M. Labarraque's *disinfecting soda liquid* is a compound of soda and chlorine, and its efficacy in destroying infectious matter, has been conclusively demonstrated. "It is now much used in removing the offensive odor arising from drains, sewers, or all kinds of animal matter in a state of putrefaction. Bodies disinterred for the purpose of judicial inquiry, or parts of the body advanced in putrefaction, may, by its means be rendered fit for examination; and it is employed in surgical practice for destroying the fetor of malignant ulcers. Clothes worn by persons during pestilential diseases, are disinfected by being washed with this compound. It is also used in fumigating the chambers of the sick, for the disengagement of the chlorine is so gradual, that it does not prove injurious or annoying to the patient. In all these instances chlorine appears actually to decompose the noxious exhalations by uniting with the elements of which they consist, and especially with hydrogen."

"Pure chloride of soda is easily prepared by transmitting to saturation, a current of chlorine gas into a cold and rather dilute solution of caustic soda. In preparing the disinfecting liquid of Labarraque, it is necessary to be exact in the proportion of the ingredients employed. The quantity used by Mr. Faraday, founded on the directions of Labarraque, are as follows: Dissolve 2800 grains of chrystalized carbonate of soda in 1.25 pints of water, and through the solution contained in a Wolff's apparatus, transmit the chlorine evolved from a mixture of 967 grains of sea-salt and 750 grains of peroxide of manganese when acted on by 967 grains of sulphuric acid diluted with 750 grains of water."

## GENERAL DIAGNOSIS.

Nothing so much distinguishes the experienced and truly well-qualified physician from the mere hap-hazard recipe-doctor, and routinist, as the ability to estimate correctly, the import of symptoms; to trace their various relations with each other, and to determine from them the seat, nature, and extent of maladies. The number of those who are remarkable for accuracy in diagnosis, is always very small; for eminent proficiency in this respect, can be obtained only by persevering observation and study, aided by a minute and comprehensive acquaintance with physiology and pathology.

Diagnosis embraces a much wider range of inquiry, than that which is presented by the actual phenomena of diseases. It is not alone from morbid symptoms that the intimate character and tendency of diseases can always be satisfactorily determined. Age, sex, moral and physical temperament, climate, occupation, habit of living, corporeal conformation, previous forms of disease, hereditary predisposition, and the character of the predisposing and exciting causes, often afford important aid in the formation of a correct diagnosis. In chronic diseases, especially, the light which may be obtained from circumstances of this kind, is frequently of the utmost importance in this respect.

The manner in which patients are examined, also, has a direct and important bearing on diagnosis. A confused, desultory, or immethodical mode of investigating the symptoms of diseases, and the various circumstances which may have contributed to determine their character, seldom leads to a clear and precise diagnosis. Indeed, the manner in which a physician examines his patients, affords no inconsiderable criterion for judging of his practical qualifications. Method, regularity and deliberation, in this respect, are almost always associated with skill in diagnosis, and consequently in the treatment of diseases.

The first objects which strike the attention of the physician, on approaching a patient, are his *countenance, attitude, motions, and voice*. It is natural, therefore, to commence the examination with these symptoms. In many instances these external conditions of the patient afford very important information as the nature and seat of maladies; and in no case, perhaps, can they be entirely neglected without losing very useful suggestions in relation to the diagnosis.

The countenance should be deliberately and closely examined, and its deviations from the healthy aspect and expression noticed. Many forms of disease are attended with expressions of countenance so peculiar and striking, that they may be at once recognized by the observant and experienced physician. The *attitude, motions*, and external condition of the patient's body, must, also, be particularly noticed. The degree of emaciation—the color and condition of the skin, and the general physical habit and conformation, should be observed. The various regions of the body should be carefully examined, more especially in diseases of a chronic and obscure character. In some general maladies, such as scurvy, syphilis, scrofula, &c., the ecchymoses, glandular indurations, eruptions, blotches, exostoses, nodes, &c., afford important diagnostic evidence. Old cicatrices, too, merit particular attention; particularly when seated along the neck and in the groins. The former

almost always indicate a scrofulous diathesis, whilst the latter afford good grounds for suspecting the existence of a syphilitic taint. The existing disease, for which the physician is called to prescribe, may have a very intimate connection with one or the other of these maladies or constitutional taints; and as patients are apt to neglect giving proper information on this subject, or even seek to conceal the fact of their having been affected with such a disease, these old marks or cicatrices are sometimes of essential service, to a full and satisfactory investigation of the case under examination.

Having attended to these external circumstances, the examination of the case must be pursued, by *interrogating* the patient. The manner in which the examination is conducted, is of great importance. A careless, irregular and hurried, or a peevish, fretful and impatient manner of examining, seldom fails to lessen the good will and confidence of the patient, for his medical attendant; whilst a mild, deliberate, earnest and interested deportment, not only gains the patient's confidence and respect, but contributes very materially to a full development and correct understanding of the nature of the malady. The questions should always be proposed in terms perfectly intelligible to the patient; and when there is reason to doubt whether the interrogatory has been correctly apprehended, it should be repeated in different terms. The employment of a pompous and technical phraseology, is more apt to excite the contempt and distrust of intelligent patients, than to draw forth correct and satisfactory responses.

It is of considerable consequence, also, to follow a determined and regular order in the questions put to the patient. Without a proper attention to order or method in this respect, important questions are apt to be forgotten, and some which have already been proposed and answered, uselessly repeated. Although the interrogatories should be sufficiently numerous and varied to obtain a full view of the symptoms and feelings of the patient, and of the circumstances which may have contributed to the development and modification of the disease, yet trivial and irrelevant questions should be avoided.

The following order of inquiry appears to be the most natural and advantageous. 1. Ascertain the *age, occupation, and place of residence* of the patient. In many instances, indeed, these circumstances, more especially the last, can have no useful bearing on the diagnosis; but this is by no means always the case; for, in some cases, very important diagnostic and practical suggestions may be obtained from a careful consideration of these facts. 2. Inquire next at *what time* the disease commenced; whether it came on gradually or suddenly; whether the existing symptoms differ from those which attended the disease at an earlier period; whether the progress of the complaint is continuous or paroxysmal, constant or occasional, uniform or attended with exacerbations and remissions; whether, in the course of the disease, new symptoms have supervened, and former ones disappeared, and whether the permanent symptoms have increased much in violence since the commencement of the complaint. Correct information in relation to these circumstances is often indispensable to a satisfactory diagnosis. "In many instances, indeed, the *succession* and general progress of the

symptoms, afford more useful data for the formation of a correct diagnosis, than a consideration of the symptoms existing at the time of examination. Unfortunately, the majority of patients are incapable of giving a proper account of the early symptoms and progress of their maladies; and the physician is thus frequently deprived of the light which a correct and circumstantial exposition of the preceding symptoms and course of the case might afford." 3. The patient should now be asked whether he experiences any pain, and if so, in what part of the body. He should be directed to place his hands on the region in which the pain is felt; for patients are apt to express themselves very vaguely and incorrectly in relation to the part in which the pain is seated. Thus we are often told that pain is felt in the *stomach*, yet when the region is pointed out with the hand, it is, perhaps, found to be seated in the lower part of the abdomen or within the chest. Inquiry must also be made whether the pain be acute or darting; dull and aching; stinging or burning, or throbbing; whether it be deep seated or superficial, continuous or intermitting, wandering or fixed, transient or protracted; and, if intermitting or paroxysmal, whether its occurrence be periodical or at regular and uncertain intervals. Pressure should be made on the part in which the pain is located, and its effects carefully noticed; and it is particularly important to ascertain whether there is soreness or tenderness to pressure in certain organs or regions of the body, more especially in the various regions of the abdomen; although the patient may not complain of any pain in these parts, when undisturbed by pressure. It will also be proper to ascertain whether the affected parts are swollen, discolored, or in any other way changed from their normal or healthy appearance and conformation. 4. The state of the sanguiferous system should next be inquired into. The *pulse* must be attentively and deliberately examined; and in doing this, attention must be paid to the circumstance, that the pulse of an infant, during the first three or four weeks after birth, beats between 120 and 130 strokes in a minute; and that its natural frequency undergoes a gradual reduction as age advances, until about the age of puberty, when it arrives at the standard of a healthy adult pulse, namely, from about 72 to 80 pulsations in a minute. It should be observed too, that *climate*, the time of day, corporeal exertion, position of the body, and mental emotions or exercise, exert, often, a very material influence on the state of the pulse. In the morning, whether in health or disease, the pulse is generally considerably slower and softer than after dinner or towards evening. In feeble and nervous individuals, we often find the pulse much more frequent when they are standing up, than when in a recumbent position. In this case the muscular exertion required to maintain the erect posture operates on the circulation in the same way as exercise, and therefore accelerates the action of the heart and arteries. Nothing, however, is so apt to give rise to a wrong estimate of the state of the pulse, as that mental excitement and flurry which feeble and irritable patients are apt to experience on the entrance of the physician into the sick chamber. I have frequently found a difference of more than twenty pulsations in a minute, between an examination made immediately after entering the room, and a second one, some ten or fifteen minutes afterwards. It is therefore an impor-



tant rule, to delay examining the pulse, until the agitation of the patient's mind has subsided. By introducing the examination with some encouraging and cheering remarks, and proceeding in the order already mentioned, there can seldom be any risk of mistake, from this source, as to the actual state of the pulse. In examining the pulse, the patient's arm should be held in a horizontal and semiflexed position. Two or three fingers must be applied to the artery, and the pressure gradually varied in force, in order to form a correct estimate of the degree of tension, vigor, hardness or compressibility of the pulse. Thirty or forty pulsations, at least, ought to be felt before the fingers are taken off. It is not uncommon in certain obscure cerebral affections, to find an intermission in the pulsations, at intervals of from ten to thirty and even a greater number of beats. A transient examination, may not only fail to detect such intermissions, but is in general, quite insufficient for obtaining a satisfactory view of the precise character of the pulse. All conversation should be forbidden, both on the part of the patient and the attendants. In certain affections, it will be proper to examine the pulse in different positions of the patient's body; namely, in the recumbent, sitting and standing postures. This is particularly useful in certain organic affections of the heart. There is perhaps, no department of symptomatology in which a high degree of proficiency is so seldom met with among physicians, as that which relates to the morbid manifestations of the pulse. Many seem to think that the only modifications of the pulse, which are worthy of particular attention, relate to its frequency, fulness, hardness, tension and regularity. There are various other states of the pulse, however, which though not easily described, communicate to the experienced and diligent observer, definite and important views concerning the pathological conditions with which they are associated. The ancients, and even some of the moderns, undoubtedly carried their refinements and pretensions, in relation to this subject, to an absurd extent. It is not improbable, however, that among much useless rubbish, which in the progress of medical science, has been swept away concerning the *organic* pulses, as they were called, some valuable facts and principles were included, which might be advantageously revived. Be this as it may, a faithful and continued attention to the morbid states of the pulse with diligent and well directed efforts to obtain definite conceptions of its various modifications, and to associate them with their respective pathological conditions, will, in general, result in the acquirement of a precision and readiness of discrimination, and accuracy of diagnostic application, which few who have not made the pulse a particular object of study and observation can well conceive or credit. 5. Having ascertained the condition of the pulse, the attention should be particularly directed to the organ or part in which the primary or essential malady appears to be seated. Inquiry must next be directed to those structures or organs which are known to hold the most intimate sympathetic relations with the part or organs principally affected. Thus, if the patient complains of much pain, or of other unpleasant sensations in the head, after having obtained a circumstantial account of the cephalic symptoms, the examination should be directed to the state of the *alimentary canal*. Again, if there is a fixed pain in the lumbar



region, the important question whether the pain be located in the kidneys, or in some neighboring structure, may, in general, be readily settled, by attending to the condition of those organs with which the kidneys sympathize most strongly; namely, the stomach, the ureters, and the testes. If there is a retraction of the testes, pains shooting down along the ureters, with nausea and vomiting, the fact of its being a renal affection may be regarded as sufficiently ascertained.

In the investigation of diseases, it should be recollected that the prominent and most annoying symptoms are by no means always located in the part where the primary and actual malady is seated. A slight inflammatory affection at the origin of a spinal nerve, not unfrequently manifests itself by severe and protracted pain in some remote part of the body; as in the chest, the abdomen, or the inferior extremities. When, therefore, a fixed pain is unattended with any other manifestations of disease in the part; when there is neither inflammation, nor soreness or tenderness to pressure, we may presume, that the primary affection, upon which the disease depends, is located in some other part of the body; and on proper inquiry, it will perhaps be found to be seated at the spinal origin of these nerves, which are distributed to the structure in which the pain is felt. To ascertain whether this be the case, firm pressure must be made on each of the spinous processes of the vertebral column. If, in passing successively from one spinous process to another, the patient flinches and complains of pain in one or more vertebræ; it may be inferred that the source of the painful affection is probably seated at the root of the nerves which pass out from that part of the spine.

Many diseases, which appear to be of a general character, consisting seemingly in mere functional derangement, are nevertheless intimately connected with obscure and frequently very serious local affections. The diagnosis, in such cases, is generally extremely difficult. In some instances, a probable opinion, as to the existence, seat and character of such obscure and local affections, can be formed only by taking into view the effects of certain remedies and the nature of the exciting causes, in connection with the actual symptoms and general progress of the malady. Inflammation of some portion of the mucous membrane of the alimentary canal, often attends general diseases with manifestations so slight and inconspicuous, as sometimes to escape the notice of even attentive observers. In relation to the diagnosis on this point, especial attention must be paid, in the examination of the symptoms, to the appearance of the tongue; the condition of the alvine evacuations; the effects of irritating ingesta; the effects of firm pressure on different parts of the abdomen, with regard to the sensations which it excites; the state of the skin; and if the malady is of a chronic character, the temper and condition of the mental faculties. It should be particularly noticed, whether the surface of the tongue be red, and of a granular or smooth appearance—whether irritating and solid ingesta give rise to pain and distress in the stomach, or tormina in the bowels; whether pressure on any part of the abdomen gives rise to a pain or a feeling of soreness; whether the skin in connection with these symptoms be dry, harsh, and contracted, and whether the temper is morose, gloomy,

taciturn and irritable. The particular appellation of these phenomena will be fully illustrated in a subsequent part of these observations.

I proceed now to the consideration of the particular diagnostic signs, as presented by the countenance, the attitude, the nervous system, the alimentary canal, the blood-vessels, the respiratory organs, the cuticular surface, the lymphatic system, and the secretions.

1. *The countenance* is variously and often strikingly changed by diseases, and affords in many instances, highly important diagnostic indications. Hippocrates strongly recommends the study and examination of the countenance in disease. His attention, however, was directed principally to the *prognostic* signs, manifested by the countenance, and the observations which he has left us, on this subject, are among his most valuable contributions to our science. In relation to *diagnosis*, however, we find but few observations in his writings, concerning the morbid expressions of the countenance. This point has been more particularly attended to, in latter times; and although there is still much room for profitable inquiry, yet the facts and principles which have already been established, are sufficiently numerous and interesting, to show the importance of attending to the countenance, as a source of valuable diagnostic information.

The singular change of countenance, which, according to Dr. Wolff, occurs in children laboring under chronic or sub-acute inflammation of the bowels, deserves to be mentioned. This writer asserts, that in the hydropic stage of this affection, "the skin at the root of the nose, immediately between the eyes," acquires a swollen or bloated appearance, by which the general expression of the countenance is strikingly altered. "The parents of my patients," he says, "frequently noticed a change in the expression of the countenance, without being able to say in what it consisted; but as soon as I directed their attention to the tumefaction of the skin, at the spot mentioned, they agreed with me, that the change in the appearance of the child's countenance arose from it, and were surprised that they had not discovered it themselves." This singular *trait*, he asserts, is one of the most constant and certain diagnostic signs of the disease, after serous effusion in the abdomen has commenced.

*Pain*, whether from spasm or inflammation, always causes a peculiar contraction of the muscles of the countenance. The physiognomical expression of pain is, indeed, so characteristic that the most inexperienced will readily interpret it correctly. An attentive and experienced observer may even perceive, in the peculiar contraction of the features, in what class of organs, or in what organ, the cause of the pain is seated. Thus when the diaphragm is inflamed, the pain, from the situation in which it is felt, might be supposed to be seated in the stomach, the liver, or the spleen; but the peculiar grinning expression of the countenance, which attends injuries, or inflammation of the diaphragm, indicates, at once, the true seat of the disease.

Pain depending on inflammation of the mucous membrane of the alimentary canal, generally gives an expression of gloom, irascibility and discontent to the countenance; and this is more especially the case when the stomach and duodenum (about eight inches of intestine below

the stomach) are affected. When the *larynx* is the seat of painful sensations, there is an expression of great anxiety depicted in the countenance, attended with an unusual expansion of the nostrils, during each inspiration. Even, when there is no *acute* pain, in affections of the lungs, this peculiar anxious expression of the countenance and expansion of the lower part of the nose, generally occurs, in consequence of the congested condition of these organs impeding the respiratory functions. Dr. Marshall Hall observes, that the more acute the pain is, in inflammation of the thorax, the more contracted, in general, will be the features. When the pain is very severe, the nostrils are strongly contracted and expanded, by the alternate acts of respirations. In addition to this, there is sometimes a vivid flush on the cheeks, terminating abruptly, and bounded by a very pale streak towards the nose. In great difficulty of breathing, *from a congested state* of the lungs, the countenance is not only marked by an expression of anxiety, but becomes, also, more or less suffused with a dark or livid hue, accompanied with turgidity or fulness. Whenever, therefore, this livid appearance, and turgidity of the vessels of the face occur, in diseases of the lungs, we may be assured that there exists either great sanguineous congestion in these organs, or an effusion of fluid into them. This is still more certainly the case, if with these physiognomical signs, the surface of the body is rather below the natural temperature.

The countenance peculiar to *tubercular phthisis* (consumption,) is so striking, that even the most careless observers, in general, readily recognize it. The delicate paleness of the face; the circumscribed flush on the cheeks in the afternoon; the pearly whiteness of the tunica albuginea, (a coating of the eye;) the quivering motion of the lips and chin in speaking, are well known as the invariable and ill-boding attendants of pulmonary consumption.

In "inflammation of the abdominal viscera," says Dr. Hall, "attended with severe pain, the muscles of the face are in a state of continued contraction; the features are unnaturally acute, the forehead is wrinkled, and the brows knit. The nostrils are acute and drawn up; the wrinkles which pass from them obliquely downwards, are deeply marked, the upper lip is drawn upwards, and the under one frequently downwards, so as to expose the teeth. The state of the features is aggravated on any increase of the pain from change of position or external pressure. When the abdominal pain arises from *spasm*, the muscles of the face are exceedingly contracted and distorted, during the paroxysms of pain; but in the intervals of the paroxysms, the countenance assumes a calm and placid aspect."

In organic affections of the heart, the countenance generally acquires a very peculiar expression. In cases of this kind, the lips are more or less livid, the face puffy or oedematous, and of a peculiar dingy hue, or suffused with a livid flush. This circumstance is worthy of notice, in relation to the diagnosis between organic affections of the heart, and dropsy of the chest. In the latter affection, the countenance almost always exhibits a pale, or pale-livid aspect, instead of the vivid flush so common in cardiac diseases.

In the *soporose* affections, too, the countenance is variously and

characteristically affected, and affords important diagnostic indications. In an apoplectic attack, the face is generally flushed, or livid, and the blood-vessels of the head and neck turgid. The muscles of the face are frequently paralytic on one side, so as to destroy the natural symmetry of the features; the mouth is drawn towards the unaffected side, whilst the eyebrow, nostril, angle of the mouth, and cheek of the paralysed side sink down. The flush and fulness of the face, do not, however, continue throughout the whole course of the disease; towards the fatal termination of the attack, the countenance usually becomes pale, and somewhat contracted. In syncope, the countenance is pale, shrunk, and covered with a cold perspiration, presenting a death-like appearance; and in that state of insensibility which, sometimes, occurs in hysteria, the countenance is nearly natural, both in color and expression. In the two latter affections there is no unusual sanguineous congestion in the head. The blood is accumulated in the lungs and heart, and hence, when recovering from the state of insensibility, patients generally experience a sense of great weight and pressure in the chest, more especially in the region of the heart.

*Green-sickness*, in females, is always attended with a peculiar and characteristic appearance of the countenance. "The incipient stage is denoted by paleness of the complexion—an exsanguious state of the prolabia, a slight appearance of tumidity of the face, or fulness of the eyelids." In some instances, a tinge of green or of yellow is observable in the pallor of the countenance, and the eyelids are of a dark lead-colored hue. "In the confirmed stage of the disease, the face is still more pallid; the lips acquire a slight lilac hue, and the integuments, in general, a puffy and tumid appearance. In the more chronic form of this malady, the countenance exhibits an appearance of *sallowness*, of squalid or dingy paleness, with a ring of darkness occupying the eyelids, extending a little towards the temples and cheeks; and in some instances a similar dark streak surrounds the mouth." Dr. Hall observes, that this sallowness or *icterode* appearance of the countenance, must not be confounded with the different shades of *icterus*, or bilious tinge. In icterus or jaundice, that is, when the discoloration depends on the deposition of bilious matter, the *tunica albuginea* of the eyes is invariably more deeply tinged with yellow, than any other portion of the surface; whereas in the more *icterode*, or *sallow* appearance of the complexion, observed, in chlorosis, and in some other chronic affections, the eyes do not exhibit any distinct tinge of yellow. When, therefore, the countenance of a patient presents a yellowish hue, without a similar tinge of the albuginea, we may conclude that it does not depend on the presence of bilious matter in the circulation, or on biliary derangement.

In chronic irritation of the bowels, from worms, or other irritating substances lodged in the alimentary canal, a remarkable pale tumefaction of the upper lip frequently occurs. This swollen state of the lip is generally but transient in verminous affections. It usually comes on at night, during sleep, and seldom continues more than two or three days. A somewhat similar swollen state of the upper lip often occurs in children affected with scrofula; more especially when the disease is principally seated in the mesenteric glands. In cases of this kind, however,



the tinnestation is much more permanent; there is also more lividity of the lips and the cheeks, and the peculiar *trait* mentioned by Jadelot, (the nasal and genal,) are not present.

In inflammation of the arachnoid membrane, the expression of the countenance is generally strikingly characteristic. Besides a general expression of surprise, confusion, and discontent, which it is impossible to describe, but which cannot easily be mistaken when once seen and contemplated, the most prominent morbid expressions of the countenance are those furnished by the eye. According to the observations of Martinet and Duchatelet, the pupils are either much dilated or contracted; the conjunctiva presents a greater or less degree of redness; and when the inflammation has made considerable progress, and is about terminating in effusion, or structural lesion of the brain, there is squinting, and constant rolling of the eyes, or they are turned upwards so as to conceal the cornea. In nearly all instances, *the upper eyelids become paralysed*, so that the patient, in endeavoring to look at any object, is unable to raise the lids by their proper muscles, and is therefore obliged to draw them upwards, together with the integuments of the forehead, by the contraction of the occipito-frontalis muscle. Martinet observes, that these latter symptoms, namely, the turning up of the eyes and paralysis of the upper eyelids, are the most constant symptoms manifested by the countenance in this disease. Whytt and Camper also declare that they are among the most certain diagnostic signs of this dangerous malady.

Sprengle says, that the appearance of the tunica albuginea affords an excellent diagnostic sign between, scarlatina and measles. In the former, he asserts, the albuginea exhibits a *uniform* red tinge, with little or no suffusion of tears; in the latter malady, the redness is not general or uniform, the injected capillaries of the conjunctiva leaving intermediate spaces of a natural or white color.

The countenance in common synochus, or general inflammatory fever, usually exhibits a very different aspect from that which occurs in fevers depending on acute local inflammation seated in the thorax or abdomen. In the former, the face is more or less tumid and flushed, the conjunctiva of the eyes is injected or red, and "the nostrils are rapidly and conspicuously dilated and contracted by the hurried respiration." In acute *symptomatic* fever, on the contrary, the countenance is generally somewhat pale and contracted, and there is no hurried movement of the nostrils, nor redness of the eyes, if the inflammation be not seated in the head. In the acute *bronchitis* of infants the face is invariably remarkably pale: whereas, in infantile remittent and common synochus fever, from cold, it is almost constantly suffused with a flush. It must be observed, however, that in the advanced stage of pneumonic inflammations, whether in infants or adults, when the minute bronchial ramifications have become loaded with mucus, or serous effusion has taken place into the pulmonary tissue, the countenance acquires a more or less distinct *livid* hue—a phenomenon always indicative of great danger. On the other hand, the countenance, which is flushed in the early stage of synochal or remitting fever, becomes pale and somewhat shrunk, towards the termination of the disease.

I pass on in the next place, to notice those diagnostic circumstances



which relate to the *attitude* and *motions* of the patient. The morbid variations of attitude are best understood by contrasting them with the healthy postures of the body during sleep. It may be presumed, that, both in health and in disease, that posture is assumed which affords the most repose to the system in general, and most relief in the performance of its various functions. In healthy and undisturbed sleep the usual posture is that of one side; the head and shoulders are generally somewhat raised, and, together with the thorax, bent gently forwards; the thighs and legs are in a state of easy flexion. The position is apt to be changed from time to time, the person lying on one or the other side alternately. The posture of the body during sleep, here described, is such as affords the most ease and repose to the different viscera, and most facility and disincumbrance in the performance of their functions, and such as allows of the greatest muscular relaxation compatible with these more essential points.

The *supine* position when attended with twitching of the tendons, or tremor of the extremities, always indicates great muscular debility. When in the progress of a continued fever, we find the patient to assume this posture with the inferior extremities extended, we may presume from this symptom alone, that the disease is assuming a sinking or typhus character. This is still more decidedly the case, when in connection with this position the patient gradually slides down towards the foot of the bed. It requires much less muscular exertion to maintain the supine posture than any other that can be assumed. In a very debilitated condition of the system, there is not enough of muscular power to preserve the body in the *lateral* posture. If the patient be placed on one side, he soon turns on his back, and is utterly unable by his own exertions to resume the lateral position. Celsus observes, that when a person affected with fever lies on one side, with the legs slightly retracted he may be regarded as not in a very dangerous condition.

In relation to the degree of muscular energy manifested by patients, there exists a marked difference between idiopathic and symptomatic fevers. In common acute fevers of an *idiopathic* character, the patient soon feels very weak, and cannot support himself in the erect posture, without great and exhausting efforts, and a feeling of faintness. This is rarely the case in *symptomatic* fever. In fevers of this kind, the sense of prostration is seldom great, nor do we observe the muscular tremor, vertigo and faintness on assuming the erect position.

In the diseases of the chest, the position assumed by the patient is often highly characteristic. In *hydrothorax*, the patient usually lies with the head and shoulders considerably elevated, by additional pillows. When out of bed, he is often observed to sit up, with the arms placed along the side, and the hands fixed and pressing forcibly on the chair or sofa on which he sits; in other cases he leans a little backwards, still supported by the arms and hands, which are placed behind his back. This kind of posture is often constant, or immediately resumed, if any accident occasions it to be changed; it gives rise to an elevation of the shoulders, from which the body is supported, or as it were suspended. The attitude of course varies with the degree and progress of the hydroptic effusion in the chest. In order that the patient may continue to

enjoy some rest while lying down, the head and the shoulders must be more and more raised, until at last, he is, sometimes incapable of remaining in bed, and is obliged to sit up with the legs hanging down. When hydrothorax is associated with organic disease of the heart, or of the lungs, the necessity of remaining in the erect posture is, in general, particularly urgent. These circumstances admit of a ready explanation. The effused fluid in the chest, produces distress and difficulty of breathing in proportion as it presses upon and impedes the free action of the lungs. In a recumbent position, with the head and shoulders low, it is obvious that the fluid must envelop and encumber a much larger portion of the lungs than when the patient is sitting up, or lying with the shoulders elevated; for in this posture the fluid sinks down to the bottom of the thorax and leaves a considerable part of the lungs free from its embarrassing pressure. Hydropic accumulation in the chest may be distinguished from mere organic disease of the heart or of the lungs, attended with symptoms resembling those of hydrothorax, by making firm pressure on the abdomen and attending to the effects. If there is thoracic effusion, the patient will experience general agitation, cough, and a sense of suffocation when pressure is thus made on the abdomen. This arises from the abdominal viscera being pressed up against the diaphragm, by which the fluid in the chest is raised, so as to embarrass the lungs and cause the phenomena just mentioned. In organic affections of the heart, with out thoracic effusion, no effects result from abdominal pressure. In affections of this kind, as well as in hydrothorax, the patient is unable to remain easy in a recumbent posture with the head low, more especially in very severe cases. But in addition to this circumstance, the effects which arise from corporeal exertions in organic affections of the heart, are much more violent and distressing than in hydrothorax. Almost every muscular effort or unusual exercise produces, to an extreme degree, difficulty of breathing, anxiety, and agitation. Ascending stairs, or a hill, seldom fails to bring on a paroxysm of the most alarming palpitation, and suffocative breathing. Although similar effects result from the operation of these causes in hydrothorax, yet, they are much less violent and alarming than in cardiac diseases. When in hydrothorax, the dropsical effusion exists only on one side of the chest, the patient invariably lies on the affected side.

*Inflammation in the abdomen, with acute pain*, is in general attended with a characteristic position of the body, and which distinguishes affections of this kind, very pointedly, from *spasmodic pains* of the stomach and bowels. In acute abdominal inflammation the patient assumes a certain position and carefully avoids active muscular exertion and change of posture. In *spasmodic pains* in the abdomen, or *colic*, on the contrary, the patient usually writhes to and fro, and constantly changes his posture. In abdominal inflammation the patient lies on the back, with the knees drawn up, and the head and shoulders raised by additional pillows, so as to relax the abdominal muscles and obviate as much as possible, pressure on the inflamed viscus. Great care, moreover, is taken to prevent any pressure from the hands or bedclothes on the abdomen, and all the necessary motions of the body are performed with peculiar caution and slowness. In *spasmodic* or *colic pains*, so far from

avoiding pressure on the abdomen, the patient often lies on the belly, or presses forcibly on the bowels with his hands. After the paroxysm of pain in colic is over, the patient resumes an easy position; but in the absence of an aggravation of inflammatory pain, the same cautious posture and manner are still retained as before.

When the inflammation is seated in one of the kidneys, the patient when in bed, inclines his body a little forwards and towards the side affected. By this position the muscles of the loins on the affected side will be somewhat relaxed and the pressure on the inflamed kidney diminished. When, in the advanced stages of typhus or typhoid fevers, attended with delirium, the patient is observed to keep his inferior extremities constantly drawn up, while recumbent on the back, *retention of the urine may be suspected*. I have known patients affected with typhoid fever, and in such a condition as not to be able to give an account of their sensations, in whom protracted retention of the urine was detected solely by noticing this retraction of the legs, or constant raised position of the knees.

In most instances of inflammation of the liver, the patient cannot lie on the left side without great aggravation of his sufferings. This symptom is, indeed, not always present in hepatitis, and when taken by itself, cannot be regarded as of any particular diagnostic importance. When it occurs, however, in connection with other symptoms indicative of hepatic inflammation, it may be considered as no inconsiderable evidence of the existence of this affection. If in a case of hepatitis, the patient is observed to lie easiest on the *left* side we may infer that the inflammation is principally seated on the concave surface of the liver.

Next in order are the diagnostic signs manifested by the tongue, gums, cavity of the mouth, fauces, and teeth. In examining the tongue, particular attention should be paid to its color, form, surface and mode of protrusion. In the simple forms of fever, unattended with inflammatory irritation of the mucous membrane of the stomach, the tongue is slightly coated with a *white* fur. This state of the tongue is rarely attended with dryness, and does not, in general, indicate a very great degree of gastric derangement. When in the progress of a disease the tongue changes from a white and somewhat loaded state, to a clean and deep red appearance we may infer with confidence, that inflammation has supervened in the mucous membrane of the stomach. A *clean and red* appearance of the tongue, attended either with a rough or smooth surface, is always to be regarded as conclusive evidence of an inflamed or highly irritated condition of the mucous membrane of the alimentary canal. In dysentery, we generally find the point and margin of the tongue of a deep red appearance, whilst the centre is loaded with a streak of brown and dry fur. This is particularly apt to be the case, in the chronic form of the disease. In chronic gastritis, and enteritis, the tongue almost invariably exhibits a dark red appearance. In some instances, this redness is attended with a rough or granulated surface, and in others it presents a smooth or glossy appearance; sometimes the whole surface of the tongue exhibits this red and rough or glossy appearance. This is generally the case when the inflammation is seated in the stomach. In many instances, however, these appearances are

confined to the tip and margins of the tongue, more especially when the inflammatory irritation is located in the mucous membrane of the colon.

In fevers depending on acute inflammation, not seated in the mucous membrane of the alimentary canal, the tongue seldom exhibits any prominent deviations from its natural state. Thus in fevers from wounds, from regular gout, and from external phlegmonous inflammation, the tongue generally varies from its healthy condition only by being covered with a thick white fur, and by unnatural dryness. In the commencement of typhus fever, the tongue is coated with a white fur, as in common synochus fever; but the white tongue of typhus differs from that of simple acute fever, in being covered with a thick layer of transparent, tenacious slime, which in the progress of the disease becomes dry, brown, and finally nearly black. The appearance of the tongue affords a good distinguishing sign between tubercular phthisis pulmonalis, and hectic fever with cough from hepatic or gastric disease. In gemine pulmonary consumption the tongue very generally retains nearly its natural appearance; whereas in affections of the stomach and liver stimulating phthisis pulmonalis, the tongue is always more or less coated with a brown fur, accompanied usually with a depraved taste.

In the early stage of chlorosis the tongue presents a pale and tumid appearance, with enlarged and prominent papillæ. As the disease advances the tongue becomes more and more pallid, clean, and smooth, and finally acquires a peculiar flabby and semi-transparent appearance. The gums and lips are very pale and exanguious, and generally somewhat swollen. Hall gives the following description of the morbid appearances of the tongue in *dyspepsia*. In acute dyspepsia, the tongue is in general loaded, the mouth clammy, the taste bitter or nauseous, the breath fetid, whilst the surface of the face is generally oily. In some severe cases the coat on the tongue is very thick, and eventually peels off, leaving its surface smooth, red, and tender, attended with an œdematous appearance of its substance. In very protracted and severe cases of dyspepsia the tongue is apt to become clean, with universal enlargement of the papillæ over the surface as in the beginning of chlorosis; or its surface is formed into lobules resembling in form those of the base of the cerebellum. In cases attended with chronic inflammation of the mucous membrane of the stomach, the surface of the tongue becomes red, smooth, and glazed. The appearance of the tongue in chlorosis does not differ materially from that which it presents in chronic dyspepsia, except that in the former disease it is pale instead of red, and indicates, in addition to gastric derangement, a defect in the process of sanguification.

A contracted and pointed tongue, is a very common attendant on inflammatory affections of the brain and its meninges. This state of the tongue is often to be observed in very severe cases of typhus; and when it does occur we almost invariably find it associated with other indications of cerebral inflammation—such as red and prominent eyes, constant delirium, flushed cheeks, &c. In fevers attended with stupor or general torpor, depending on congestion, the tongue instead of being contracted and pointed presents a dilated and flabby appearance. This



relaxed and dilated state of the tongue is seldom accompanied by delirium; but instead of this, there is usually a *general* diminution of sensibility and irritability, as well as of muscular power and the temperature of the surface. Dr. Miner mentions this appearance of the tongue as one of the most constant symptoms of *typhus syncopalis*.

A tongue covered with yellow, or yellowish brown fur, attended with a bitter taste, indicates prominent derangement of the biliary organs. A *tremulous* tongue is, in general, one of the first symptoms of the passage of the synochus fever into a typhus or low state.

In the early stage of *scarlatina*, a number of florid papillæ protrude through the white coat on the surface of the tongue; and Bateman states, that this appearance will always enable us to distinguish it from measles. In chronic hepatitis, the gums have a peculiar firm, smooth, or glossy appearance, whereas in chronic dyspepsia, they usually present a soft or spongy condition.

The next class of symptoms to be considered, are those manifested by the *nervous system*. The most common, and generally the earliest symptom of deranged function of the brain, is disturbed sleep. In the diseases of children, an unusual drowsiness, especially when attended with a disordered state of the alimentary canal and febrile irritation, is often one of the first symptoms to awaken alarm and suspicion of probable disease within the head. Under whatever circumstances profound morbid sleep or coma may occur, it always denotes cerebral oppression from congestion or effusion, or some other cause capable of compressing this organ. When, therefore, in the course of diseases attended with symptoms of cerebral irritation or inflammation, somnolency supervenes, we may conclude that great congestion, or effusion, or disorganization of the cerebral structure, has taken place.

*Wakefulness* is indicative of great cerebral irritation or exhaustion. It is particularly apt to occur from sympathetic excitement of the brain, depending on intestinal irritation, and exhaustion from loss of blood. When morbid wakefulness depends on these causes, it is almost invariably attended with great restlessness or 'jactitation,' a distressing feeling of anxiety in the region of the heart, and a pale and contracted countenance. Sudden starting during sleep is generally connected with intestinal irritation from indigestion or worms. Children whose bowels are loaded with sordes or worms are particularly apt to start in sleep, and this symptom is one of the most certain diagnostic signs of such a condition of the alimentary canal. Similar hurried awakenings occur in organic affections of the heart, and in hydropericardium, (dropsy of the heart,) and frequently, also, in hydrothorax; but in these complaints, the starts from sleep are almost always attended with a distressing sense of suffocation, or impending dissolution, great agitation and alarm.

Acuteness of hearing and sight occur in the incipient stage of cerebral inflammation; but they are equally, and often more strikingly presented in sympathetic irritation of the brain from intestinal irritation, accompanied with exhaustion. As a general observation, however, it may be said that when the senses of sight and hearing are morbidly acute, or when there is intolerance of light and sound, the brain is in a state of irritation, whether sympathetic or idiopathic. Obtuseness of



hearing is a common symptom in the advanced stages of typhoid fevers, and indicates a considerable degree of sanguineous engorgement, but not inflammation of the brain.

Strabismus, and seeing objects double, always denote very considerable cerebral disturbance. These symptoms arise from sanguineous or serous effusion into, or upon the surface of the brain, and from disorganization of a portion of the structure. Torpor or defect in the sense of touch, if general or confined to one side of the body, indicates an oppressed state of the brain, and may be both the precursor or consequence of apoplexy. When torpor of feeling is confined to one extremity, or only to a part of an extremity, we may infer that the nervous communication between the affected part and the sensorium commune has been partially interrupted, by compression of the principal nerve leading to the part, or that the nervous extremities of the part have become diseased and incapable of transmitting the nervous power.

*Morbid sensations* are among the most common phenomena of diseases. In many affections, indeed, there are peculiar and characteristic modifications of sensibility, which it is of importance to notice in a diagnostic point of view. In strumous disease of the mesentery an unusual sensibility to cold constitutes a peculiar and very early symptom. "In this disease, the patient is greatly sensible to cold and to the least draught of air, and in cold weather especially, constantly draws near or hangs over the fire, until the hands and legs assume a brown color from the influence of the heat."

Pain may depend on inflammation, on spasm, or on nervous irritation. Each of these kinds of pain has a peculiar character by which it may in general be readily distinguished. *The pain of inflammation* is attended with great tenderness or soreness of the affected part—is increased by pressure—generally continuous, and always attended with more or less of febrile irritation. Spasmodic pain, on the contrary, is intermittent—is neither throbbing nor burning, like that of inflammation, nor is it attended with redness, swelling, augmented heat, or febrile excitement. Pressure, which always increases the pain of inflammation, generally mitigates spasmodic pains. *Neuralgic* pain differs from inflammatory and spasmodic pain, by occurring in transient and extremely violent paroxysms. It darts with the rapidity of lightning along the ramifications of the affected nerve. It is not attended by swelling or increased heat, unless some degree of inflammation be associated with it; and the slightest agitation or touch is apt to renew its excruciating paroxysms.

It is a fact demonstrated by daily observation, that the character of inflammatory pain is peculiarly modified by the nature of the structure in which the inflammation resides. This circumstance necessarily arises from the physiologocal fact, that each structure of the animal system is endowed with a peculiar modification of the vital properties. From this variety in the general character of inflammatory pain, according to the structure in which it resides, we frequently obtain important diagnostic indications. In the mucous membranes, inflammation is attended with a burning or stinging pain, and is seldom very violent: in the serous membranes the pain is lancinating, and generally extremely

acute; in the fibrous tissues, it is dull, aching and gnawing; in the nerves, rapid, darting, remitting and excruciatingly severe; and in the parenchymatous and cellular structures, it is dull, throbbing and heavy. Thus the pain experienced from inflammation of the pleura, is acute, piercing, and generally extremely severe; whilst that from inflammation of the substance of the lungs is dull, pressing, and generally inconsiderable in violence. The pain attending inflammation of the mucous membrane of the stomach is of a burning, gnawing, or stinging character; that of the liver is acute, throbbing, and generally accompanied with a sense of fulness and tension in the right hypochondrium and epigastrium. The character of the pain may, moreover, assist us in determining in what portion of this organ the inflammation is principally seated. When the substance of the liver is the principal or exclusive seat of the inflammation, the pain is seldom very acute or violent—being obtuse, heavy, and heating. When the *convex* surface of this organ is affected, the pain is usually extremely severe, darts upwards towards the left or right shoulder, and is always much increased by external pressure, deep inspiration, cough, and motion. In cases where the *concave* surface is the seat of the inflammation, the pain is, in general, dull, accompanied with much anxiety in the epigastrium, nausea, and often vomiting. Cases of this kind, frequently resemble gastritis; but may be distinguished from this affection by the pain, distress and vomiting not being increased by taking warm liquids into the stomach.

In many instances, the painful sensation is referred to a different and often remote part, from that in which the primary irritation or affection is seated. Irritation in the neck of the bladder, frequently gives rise to pain in the glans penis; inflammation of the liver often causes pain in the left, and sometimes right shoulder; and severe and protracted pain in the knee and legs, is generally among the first painful sensations attending hip disease. In many cases, indeed, pain in the knee is felt for a considerable time before any unpleasant sensations are experienced or complained of in the hip; and I have not unfrequently known various applications made to the knees of children for the relief of pain in that part, which was subsequently found to be merely symptomatic of scrofulous disease of the hip. Inattention to these and similar facts, has often led to very useless and painful applications, and placed the physician under the mortifying, and indeed, justifiable imputation of ignorance or culpable carelessness.

The next class of symptoms to be considered, are those manifested by the morbid conditions of the alimentary canal. From the nature and appearance of the alvine evacuations, we may often derive important diagnostic information. The functional derangements of the liver, are in general, readily distinguished by the character of these evacuations. Ash, or clay-colored feces indicate either deficient secretion of bile, or obstruction to its regular flow into the intestines. This condition of the biliary organs is almost always attended with increased irritability of the stomach. When the alvine discharges are liquid, and of a bright *green* color, as is frequently the case in infants, the existence of much acid in the bowels may be confidently inferred. Bile, as it comes from the liver, never possesses such a color. It is only by being mixed with acid

in the intestines, that it acquires this appearance. However dark and vitiated the bile may be before it is discharged into the bowels, it will always communicate a yellow color to water. It becomes green in the intestines by the action of the acid it meets there. According to the observations of Dr. Cheyne, the appearances of the stools afford a good diagnostic sign between infantile remittent fever, and hydrocephalus. In the former disease, the alvine discharges are, generally, dark-brown or mud-like, and extremely fetid. In hydrocephalus, the stools are usually gelatinous, dark-green, sometimes black, like tar, and of a peculiar sickly smell. Watery and reddish stools, containing small flakes of mucus, resembling the washings of flesh, always indicate a high degree of inflammatory irritation of the mucous membrane of the small intestines.

The diagnosis of diseases is also much aided by an attention to the morbid conditions of the respiratory organs. In general, the greater the velocity and momentum of the blood, the more rapid is the respiration. In acute diseases, attended with a frequent and full pulse, breathing is always accelerated. In affections of the head, attended with sanguineous congestion in the brain, respiration is generally more or less irregular, unequal, and suspicious. When the congestion, and consequent cerebral compression, is so great as to produce partial insensibility, the breathing becomes slow, irregular, and stertorous. Whatever obstructs the functions of the brain, or interrupts the nervous communication between it and the respiratory apparatus, impedes or destroys the function of respiration: and the slowness and irregularity of the respiratory acts will be in proportion to the degree in which the functions of the brain are oppressed.

In pneumonia, breathing is sometimes performed by the action of the diaphragm alone, without any perceptible elevation and depression of the ribs of the affected side. In abdominal inflammation, with acute pain, on the contrary, respiration is performed, almost exclusively by the action of intercostal muscles, the alternate rising and falling of the abdomen, so conspicuous in thoracic inflammation, being almost entirely absent. This peculiarity of breathing, says Dr. Hall, may be distinctly observed by looking on the chest and drawing the bed-clothes tight over the abdomen: the respiration has sometimes the appearance of heaving of the chest; every movement of the diaphragm is cautiously avoided, on account of the motion which its action communicates to the abdominal viscera. The diaphragm and abdomen begin to move, as the pain diminishes, whether from mitigation of the disease, from sinking, or from gangrene.

In inflammation of the substance of the lungs, or of the mucous membrane of the ultimate bronchial tubes, respiration is performed with great difficulty, and in violent cases with distressing anxiety and labor. The shoulders are elevated, and the lower part of the sternum is drawn back, during each act of inspiration, whilst the abdomen is at the same time suddenly protruded, and the upper part of the chest raised. In the diseases of children, the manner in which respiration is performed often throws important light on the character of the disease. When, with more or less cough, the inspirations are short and catching, more

especially when the countenance, at each inspiration, exhibits an expression of pain or suffering, the existence of pectoral inflammation may be confidently inferred. If the countenance is pale, and the breathing wheezing and laborious, the inflammation is probably seated in the mucous membrane of the bronchia.

Laborious and anxious breathing on muscular exertion or strong mental excitement, particularly from walking up hill, or ascending stairs, is strongly indicative of organic disease of the heart. The dyspnœa of hydrothorax differs from that of organic cardiac disease, in being more liable to recur in violent paroxysms from the causes just mentioned in the latter than in the former affection. In hydrothorax, too, the dyspnœa, thus excited, comes on gradually, whilst in organic disease of the heart the paroxysm of suffocative breathing recurs with sudden violence. Asthina is attended with a peculiar mode of dyspnœa. The act of inspiration consists of a quick and imperfect dilatation of the thorax, but expiration is much more protracted, labored and wheezing. "When the disease is violent, every muscle subservient to this function is brought into strong exertion, with the exception of the intercostals, which, although excited to strong efforts, are incapable of that degree of action which is necessary for the due expansion of the chest. What, however, particularly characterizes the dyspnœa of asthma, is the *wheezing* during expiration."

When the breathing is hurried, panting, sighing, and the lungs are but partially filled during inspiration, there is probably much debility accompanied or depending on nervous intestinal irritation. This state of the system and of the respiratory organs, is generally attended with great restlessness, jactitation, and inability to sleep.

Having described some of the more remarkable diagnostic phenomena, in relation to *respiration*, it remains for me to consider the diagnostic indications derived from the character and attending circumstances of *coughing*.

With regard to the phenomena of cough, therefore, we may notice the following general diagnostic circumstances: Patients affected with inflammation of the pleura, lungs, or peritoneum, always *repress* the cough as much as possible, in order to obviate the great increase of pain which free coughing invariably produces in these affections. When, therefore, the patient is observed to make great efforts to stifle or suppress the acts of coughing, the existence of local inflammation may be confidently inferred. The seat of the inflammation will be pointed out by the accompanying symptoms. The cough attending acute inflammation of the mucous membrane of the bronchia has a much duller sound, and is attended with much more mucous rattling in the chest, than that which results from acute inflammation of the pleura. This remark applies particularly to the early period of these affections; for in the advanced stage of the latter malady, the cough is generally as dull and rattling as in bronchitis. Cough depending on gastric or intestinal irritation, is generally attended with a peculiar hollow sound: this kind of cough is frequently met with in children laboring under verminous irritation. The character of the cough will, in general, afford considerable aid in distinguishing phthisis laryngea, from phthisis pulmonalis; or



that form of consumption which arises from ulceration in the larynx, from true pulmonary consumption. In the former the cough comes on in violent and spasmodic paroxysms, particularly in the morning on rising from bed; whilst in the latter form of the disease, the cough, is usually, much less sudden and violent in attacks, and is, besides, destitute of the spasmodic or convulsive character of the former. In the laryngeal variety of the disease, the cough has a deep hollow sound, not unlike that which is produced by verminous irritation of the bowels, whereas, in pulmonary phthisis, it always has a flattened and lacerating sound. In the former of these maladies, violent fits of coughing are excited by the patient's passing from a warm into a cold air, by inhaling smoke or the dust raised by sweeping, or any irritating fumes, and the same effect is frequently produced by swallowing food. In pulmonary phthisis, coughing is very rarely excited by these causes, and when they do produce this effect, the cough is usually slight and of very short duration.

The character and appearance of the matter expectorated, afford important diagnostic indications. In *peripneumonia*, the *tenacity* of the matter expectorated is so great, that we may reverse the vessel which contains it, and retain it in this position for some time, without detaching it from its sides. Laennec regards this kind of sputa, as pathognomic of this affection, since it is the only symptom which is found exclusively in this form of pulmonic inflammation. These sputa are somewhat diaphanous and of slightly yellow or greenish color. In acute bronchitis the expectoration is much less tenacious in its consistence, and is generally quite transparent, resembling the white of eggs. When the fluid expectorated has a dark appearance, like dissolved blood, and possesses a very fetid smell, we may infer that some portion of the diseased lung is in a gangrenous condition. In *chronic* bronchitis, particularly in those cases which result from pertussis, the matter expectorated often presents a white cream-like appearance, bearing considerable resemblance to the whitish friable matter which is sometimes brought up in small quantities in the latter stage of tubercular phthisis. This white matter, in the latter disease consists of the softened substance composing the tubercles. Mucous membranes, under a high degree of irritation, often secrete a fluid, which bears a strong resemblance to genuine pus; but which in its composition and properties, is nevertheless, strictly a mucus. Various tests have been recommended for distinguishing puruloid secretions of this character, from genuine pus, and a correct decision on this point, is of much importance in forming a satisfactory diagnosis; for when the matter expectorated is found to be pus, there can be no doubt, that the structure from which it proceeds is in a state of active inflammation or ulceration. If, on the contrary, it be found to possess the character of mucus, we may infer, that neither an active state of inflammation nor ulceration exists in the diseased organ, but only a high degree of irritation, or sub-inflammatory excitement. The specific gravity of pus is considerably greater than that of mucus—the former sinks in water, the latter floats on the surface. This is the usual test, but cannot always be relied on; for although we may safely pronounce the matter expectorated to be *pus*, when it sinks quickly to the bottom of the vessel, yet we cannot, with entire assurance, infer that it is mucus

when it remains floating on or near the top of the water ; for a considerable portion of pus is often so intimately mixed with pronchial mucus, as to give it nearly a uniform appearance, and cause the sputa to swim on the surface. The following tests have been proposed, and I think, entitled to confidence : The muriate of ammonia coagulates pus ; but on mucus no such effect is produced by it. Heat coagulates mucus, but not pus. Water added to the solutions of pus in sulphuric acid, and in a solution of caustic potash separately, produces, in each, a copious precipitate. Mucus treated in the same way, does not exhibit the same effect. Dr. Young mentions the following test : A small portion of pus put between two glasses, will, when held near the eye, and looked through at a distant candle, exhibit an iridescent spectrum, of which the candle is the centre. Mucus does not present this phenomenon.

The morbid conditions of the external surface of the body should always be carefully observed. In examining diseases, particular attention should be paid to the temperature, the color, the state of dryness or moisture, the fulness or constriction, and the roughness or smoothness of the skin. The existence of œdema, or of emaciation, are, moreover, important diagnostic circumstances. A yellowish or icteric hue of the skin, and especially of the tunica albuginea, are well known indications of derangement of the biliary organs. In the various forms of disease produced by marsh miasmata, this symptom is rarely absent. This appearance of the skin, says Mr. Hall, must not be confounded with the *sallow* hue which occurs in chlorosis, cancer, and some other organic affections. "Sallowness is not necessarily accompanied by a yellow hue of the albuginea ; but the *icteric* appearance of the skin is always associated with a similar tinge of the eyes. When, therefore, the albuginea is free from this yellowish hue, we may infer that the biliary organs are not particularly disordered, however *sallow* the general surface may be. When a decided icteric or jaundiced hue of the skin, is associated with constant and obstinate torpor of the cutaneous exhalents, or dryness of the surface, we may infer that the biliary derangement, upon which these phenomena depend, consists of chronic inflammation and induration of the liver ; and this diagnosis may be regarded as still more certain, if, at the same time, the gums have a peculiar and unnatural firmness. A purple or bluish color of the skin, when not the immediate consequence of cold, indicates deficient decarbonisation of the blood in the lungs. This appearance occurs, in a striking manner, in the Asiatic cholera. When this livid hue is confined to some particular part of the body, it denotes great venous congestion in the part. Thus a livid color of the face indicates great engorgement of the blood-vessels of the head, and is almost universally connected, or rather dependent on obstructed circulation through the lungs, and attended with an imperfect performance of the respiratory functions.

A pale semi-transparent appearance of the surface, particularly of the prolabia and face, occurs after profuse hæmorrhage, or from whatever greatly exhausts the system or impedes the process of sanguification. This appearance of the skin is always accompanied by great languor and debility, and depends, generally, on a morbid excess of the serous portion of the blood. This state of the system is almost invariably at-

tended with more or less of anasarcaous effusion. A pale and cachectic appearance of the face, attended with a leaden hue of the proboscis and a *puffy swelling under the eyes*, is frequently noticed in organic affections of the heart. A cold state of the surface of the body, attended with a sensation of heat in the internal parts, indicates great sanguineous congestions of the viscera. The heat is sometimes very unequally distributed throughout the various parts of the body, and it may be laid down as a general rule, that in whatever part the heat is preternaturally elevated, there is an unusual determination of blood to that part. Thus in hydrocephalus, the head is almost always considerably warmer than any other part of the body; and in dysentery and peritonitis the abdomen is preternaturally hot to the touch, whilst the extremities in the latter stage of the disease are unusually cool. In organic affections of the heart, the hands, nose and cheeks are very apt to become preternaturally cold, whilst the heat within the rectum and under the tongue is generally considerably higher than natural. A pungent, stinging heat of the surface, or the *calor mordax*, as it is technically called, indicates a high grade of malignity or a tendency to putrescency in fevers. This pungent heat differs very distinctly from the *burning* heat which occurs in synochial or inflammatory fever. By laying the hand on the skin of a patient laboring under inflammatory fever, the sensation of heat is at first very great, but on suffering the hand to remain for a short time, the sensation of heat gradually diminishes, until it seems to the touch but little, if in any degree, above the natural temperature of the body. In typhus gravior, on the contrary, the heat (*calor mordax*) becomes more and more pungent and severe, and the biting or acrid sensation of heat remains in the hand, even after it is removed from the patient's body.

The appearances and character of the urine also, often afford valuable diagnostic indications. In inflammatory affections it is generally very red and small in quantity; in nervous diseases, more especially in hysterical affections, this secretion is usually copious and limpid, or but slightly colored. In diseases of the biliary organs, the urine is almost invariably conspicuously tinged with bile. To distinguish urine colored with bilious matter from the highly colored urine of inflammatory fevers, a small strip of white linen or paper should be immersed in it. If the urine contains bile, the linen or paper will receive a very distinct yellow stain, which will remain when dried. If it be free from bilious matter no such tinge will be communicated. Much has of late years been said concerning the connection between a serous or coagulable condition of the urine (in hydropic affections,) and a phlogistic or inflammatory state of the system. Drs. Blackall, Wells, and Ayre, have investigated this subject with minute attention. It has been satisfactorily ascertained by these and other pathologists, that those cases of dropsy which are attended with an obvious phlogistic diathesis, and especially such as arise from the influence of general causes, the urine, with scarcely an exception, contains a large quantity of coagulable serum. The quantity of serum mixed with the urine may, therefore, be regarded as a pretty correct index of the degree of general inflammatory excitement attending the disease. Serous urine may be regarded as a sort of pyrexometer in

hydropic affections, which, though not universally to be relied on, is yet sufficiently constant to entitle it to the attention of the practitioner. I am satisfied, from considerable attention to this subject, that in almost every instance where there is coagulable serum in the urine of dropsical patients, the general condition of the system will be found manifestly phlogistic. The mode of testing the urine, for this purpose, is to expose a portion of it in a spoon to the heat of a lamp. When, in hydropic affections, the urine is high colored, and on cooling becomes muddy, or deposits a red or reddish sediment, we may infer with great probability that the liver is in a state of organic disease.





## OF THE ACUTE DISEASES OF THE SANGUIFEROUS SYSTEM.

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### INTERMITTING FEVER.

INTERMITTING fevers occur under the three primary types mentioned in our preliminary observations, and occasionally under the various complications which these types are liable to assume. According to the type which they assume, therefore, they are divided into *quotidians*, *tertians*, *quartans*, *quintans*, &c. (*Quotidians*, daily paroxysms—*tertians*, when they occur every third day—*quartans*, every fourth day—*quintans*, every fifth day.)

The fit or paroxysm of an intermitting fever consists of *three* distinct *periods* all of which are characterized by a series of *peculiar* phenomena, each succeeding period being the immediate consequence of the one which precedes it.

The symptoms which characterize the *forming* stage of an intermitting paroxysm, do not differ from those which usually precede the development of other forms of fever. A sense of great lassitude, frequent yawning and stretching, a feeling of uncomfortable weariness of the whole body, and slight aching pains in the loins and extremities, constitute the first manifestations of the approach of an intermitting fever.

*Cold stage.*—After the foregoing symptoms have continued for an indefinite time, the patient begins to experience slight and transient sensations of cold along the back; attended often with an irresistible disposition to yawn and change the position of the extremities; the fingers and feet lose their natural temperature, and feel slightly benumbed; the patient becomes restless, and soon tired of the same position; his ideas pass with unusual rapidity through his mind; he is incapable of fixing his attention upon any particular object, and generally manifests an unusual irritability of mind, or ill temper, or a taciturn moroseness. The sensation of chilliness, with more or less rapidity, extends itself from the extremities over the whole body, the skin becomes universally pale, contracted, and rough; the pulse loses its activity and size, becoming small, contracted, frequent, and firm. When the sense of chilliness has passed from the extremities to the body, a slight trembling of the muscles begins, generally, at first in the jaws, and extending thence quickly over the whole frame. This trembling is sometimes so severe as to agitate the patient as if he were in a paroxysm of convulsions, and sometimes exhausts him so much as to leave him scarcely able to move his limbs after their subsidence. These tremors are technically called *rigors*. During the chills the sensibility of the surface is benumbed, and the whole body becomes diminished in volume so that rings which were previously tight

drop from the fingers. The feeling of cold is not confined to the surface, but appears in violent cases to penetrate even to the bones, and to pervade the whole system, "and is accompanied with an indescribable sense of universal pain and fatigue." The breathing also is hurried, anxious, and oppressed, and frequently attended with a short dry cough, deep sighing, and a sense of weight and tightness in the chest. Along with these symptoms there occurs usually much dejection and confusion of the mind, and, in some instances, a slight degree of delirium. In very debilitated persons a violent fit of *rigors* often induces a complete state of stupor or coma, more especially when feebleness of body is attended with general plethora. In many instances, frequent and distressing vomiting occurs, particularly about the period of its subsidence, and the ejections are generally bilious, though occasionally ropy, transparent, and insipid. The thirst is always urgent in this stage, and the mouth and fauces are dry and clammy. The urine is clear, colorless, without sediment, and often copious. Generally, the chills are universally diffused over the body; but in some cases they occur partially, remaining confined to one or more parts of the body; and instances have been recorded in which a single extremity only was affected with the chills. In some cases of intermitting fever, the cold stage is attended with but a very slight sensation of chilliness creeping along the back and over the extremities; and I have known this stage to commence with violent vomiting, and to terminate speedily in stupor and partial insensibility. The duration of the cold stage is very various, ranging from a few minutes to four or five hours. Sooner or later, however, the chills begin to abate; transient flushes of heat pass over the face and body; the chilliness now recedes rapidly, and the heat encroaches very gradually, until it has obtained an entire ascendancy. At this time the nausea and vomiting are usually most severe—both of which often continue until the hot stage is completely developed.

The hot stage is characterized by a full and flushed countenance; an intensely *hot* and *dry* state of the surface of the body; great thirst and dryness of the mouth; great acuteness of the sensorial powers; a full, strong, and frequent pulse; a more free and regular respiration than in the preceding stage, though still more oppressed and hurried than natural; great pain in the forehead; pain in the back and extremities; sometimes slight delirium just before commencement of the succeeding stage; a scanty and deep-colored urine without sediment. This stage is as various in its duration in different cases, as the preceding one. It continues, however, almost always much longer than the cold stage. The temperature of the skin is always very considerably augmented. Fordyce observed it as high as  $105^{\circ}$  of Fahrenheit. This stage terminates in the last or—

*The sweating stage.*—When the perspiration begins to appear, an obvious abatement of all the febrile symptoms occurs. The sweat appears at first about the head and breast, and thence gradually extends over the whole surface of the body. On the appearance of this evacuation, the pulse loses its *hardness* and *frequency*, but still retains its *fullness*. The breathing at the same time becomes free and natural; the febrile heat subsides rapidly; and the urine, though still very high-color-

ed, deposits a lateritious or pale red sediment. This gradual melioration of the febrile symptoms continues under the free flow of the perspiration, until the paroxysm terminates in a state of perfect *convalescence* or *intermission*.

The intermission, though entirely free from febrile phenomena, cannot, however, be regarded as a state of health; for, during this interval, the patient usually feels some degree of languor; becomes easily fatigued; complains often of a want of appetite, and an indisposition to bodily or mental exertion. He possesses moreover, an unusual degree of sensibility to the impressions of cold air; and his countenance exhibits a pale and sickly aspect. In some, though comparatively few instances, the appetite is good, and the patient experiences no feelings of indisposition whatever during the intermission. The more conspicuous the symptoms of imperfect health are during the intermissions, the more difficult, in general, will it be to prevent its recurrence; or, the more readily will it relapse after it has been suspended.

Intermittents of every type are subject to certain prominent modifications in relation to their general character, which, as they have important practical bearings, deserve particular attention. We meet with intermittents, for instance, which are attended with unequivocal manifestations of an *inflammatory character*; others occur in which symptoms of great *internal venous congestions* are equally conspicuous; a third variety of intermittents will exhibit strong symptoms of *biliary and gastric irritation*; and a fourth variety will be characterized by phenomena indicative of a more or less *malignant character*. According to these circumstances, intermittents may be divided into the four following varieties, viz: 1, the *inflammatory*; 2, the *congestive*; 3, the *gastric*; and 4, the *malignant* intermittents.

1. *Inflammatory intermittents* occur most frequently during winter and in spring. Quotidians are more apt to assume this character than tertians; and tertians more apt than quartan. In young, robust, and plethoric subjects, vernal quotidians are especially prone to manifest inflammatory symptoms. Intermittents of this character, generally begin with strong rigors. In the hot stage the temperature of the surface is very intense, and the pulse is peculiarly strong, hard, and full. The most characteristic marks of inflammatory intermittents, occur, however, during the intermission. However profuse the perspiration in the last stage, the intermission does not become complete. The pulse remains quick, somewhat tense and accelerated; the thirst is still considerable, and the skin dry and warmer than natural; the whole system is irritable; the temper is fretful or discontented; slight headache is experienced; and transient pains are often felt in the extremities and the back. In many instances a short and dry cough occurs, with some oppression in the chest, or other pectoral affections. Richter observes, that inflammatory intermittents are very rarely attended with symptoms of gastric disturbance from vitiated secretions, bile, &c. The intermissions in agues of this kind are usually short.

2. *Congestive intermittents* occur seldom. They happen generally in persons of exhausted and debilitated habits; and in such as are of an irritable and nervous temperament, connected with habitual or accidental



debility. They are characterized by a very protracted cold stage, deep-seated pain in the head, vertigo, fainting, a sense of weight or oppression in the breast, coma, a small and weak pulse; the hot stage coming on very slowly, and developing itself very imperfectly, so that instead of hot skin, flushed countenance, and a full and vigorous pulse, the system continues to be oppressed, the skin scarcely warm, the countenance pale and contracted, the breathing confined and anxious, and the pulse frequent, small and tense, with an internal sensation of heat.

3. *Gastric intermittents* are characterized by prominent symptoms of gastric and intestinal irritation, redundancy of biliary secretion, and other matters lodged in the alimentary canal. The ordinary intermittents of the temperate climates, occurring in autumn, are usually of this kind. Intermittents of this modification are attended with a foul and bitter tongue; much nausea and bilious vomiting; great pain in the forehead; diarrhoea, a yellow hue of the skin and eye; urine loaded with bilious matter; thirst for acid drinks, and sensation of weight or fulness in the right hypochondrium. Intermittents of this kind are apt to produce visceral disorders, more especially indurations of the spleen and liver; and finally, a cachectic condition of the system which it is often extremely difficult to remove.

4. *Malignant intermittents* are of frequent occurrence in *hot* climates, and are always of the most dangerous character. They are characterized by a very copious and *fetid* perspiration in the third stage, together with colliquative hemorrhages from various parts of the body, sometimes petechia, and other marks of malignity. They run their course with great rapidity, death usually taking place in the third paroxysm.

*Irregular and anomalous intermittents.*—Intermittents do not, however, always pursue the regular course that has just been described. In some instances, anomalies of a remarkable character occur, both in relation to the phenomena, and the succession of the stages of the disease. I have known a case, in which the first two paroxysms occurred in a perfectly regular manner; during the second and third intermissions, the paroxysms returned without a cold stage, the patient experiencing, instead of it, a peculiar feeling of numbness on the top of the head, with great dullness of hearing, for about forty or fifty minutes before the supervention of the hot stage. There are instances on record, of the inversion of the natural order of the cold, hot and sweating stages; several distinct instances of which occurred under my observation in the fall of 1828. Cases have been noticed, in which the perspiration, in the third stage, was substituted by diarrhoea; and Clegghorn states, that he saw tertians, which terminated by an increased flow of urine, with scarcely any sweat.

In infants, the paroxysms of intermitting fever are sometimes ushered in by convulsions; but the convulsions are most apt to occur at the commencement of the hot stage. Indeed, the cold stage of very young children is seldom marked by distinct *rigors*. A pale and shrunken countenance, with an obvious reduction of the temperature of the surface, yawning, and stretching, usually manifest the presence of this stage in infants.

There are certain affections, not of infrequent occurrence, which, from their strict periodicity, as well as from their apparent organization

from the same causes that give rise to intermittents, are termed *masked agues*. Thus, neuralgia, in various parts of the body, sciatica, rheumatism of the eye, toothache, cramp in the stomach, dysentery, cholera, hic-cough, mania, and acute pains in other parts of the body, have been known to recur in a manner strictly periodical, and to have yielded readily to the same remedies which are found to arrest the course of an ague. These affections, when thus perfectly periodical, generally manifest their alliance to intermitting fever, by being almost always preceded by a very slight sensation of chilliness, and by being attended with a moist skin and a turbid urine at the termination of the paroxysm.

Intermittents are sometimes *complicated* with other affections, such as dysentery, cholera, jaundice, and visceral inflammations. The vernal intermittents are most apt to become complicated with inflammatory affections; and those which occur in autumn are most frequently combined with disorders of the alimentary canal and nervous system. Paralysis and apoplexy, according to the observations of Dr. Macculloch, are by no means uncommon occurrences in intermitting fever; and they occur, sometimes, as direct consequences of the influence of the miasmata, without any distinct febrile phenomena.

Many of the affections which supervene in intermittents, appear to result from the inroads of the fever itself on the constitution: but the majority of these maladies, whether occurring as concomitants, sequents, or substitutes of the fever, are, without doubt, direct consequences of the deleterious influence of the remote cause. Dropsy, jaundice, scirrhus, &c. are, probably, usually the result of the general febrile disease. Unquestionably, too, aneurismal enlargements of the heart and large vascular trunks, must be regarded as the consequence of the violent congestion of the blood which occurs in the internal organs during the cold stage. In the same way, apoplexy sometimes occurs in the commencement of intermitting fever; for the blood recoils so powerfully from the external to the internal vessels, in the cold stage of the disease, that those who are, in other respects, predisposed to determinations to the head, are liable to suffer apoplectic oppression of the brain from this cause. Dr. Macculloch warmly opposes the opinion, that in apoplexies of this kind, there is any particular congestion of blood in the brain. The cases which I have myself seen, however, do not permit me to doubt that they were essentially connected with cerebral pressure from inordinate vascular turgescence. It is not unlikely, however, that those apoplectic symptoms which occur as the immediate consequence of the powerful influence of miasmata on the brain, independent of chills, or torpor of the vessels of the surface, are in no way dependent on cerebral compression from sanguineous congestion.

Paralysis, neuralgia, mania, &c., as well as the above named affections of the alimentary canal, are, however, almost invariably direct malarious affections; occurring, with or without any manifest febrile phenomena; and frequently exhibiting their affinity to intermitting fever, by their paroxysmal and strictly periodical character.

But if intermitting fever has a tendency to *produce* other affections, it has been found also to *remove* various diseases of a chronic and obstinate character. Celsus observes, that intermitting fever is often remedial of

itself. The tendency of quartans to cure epilepsy, is mentioned by Hippocrates; and we are told that the celebrated mathematician De la Hire, was permanently relieved of an habitual and most violent palpitation of the heart, by an attack of ague of the quartan type. Fordyce states, that rheumatism, cutaneous eruptions, hysteria and indigestion, have been effectually removed by attacks of intermitting fever; and Vogel asserts, that he has known a thump and hypochondriasis cured by this disease. Almost all writers, however, attribute much more sanative power in this respect to *quartans* than to either of the other two types.

Intermittents, when suffered to pursue their course without being controlled or embarrassed by external influences, appear to have a natural tendency to terminate spontaneously, after a certain number of paroxysms have been passed through. Quotidians, for instance, if they are simple and regular, will tend to terminate their course on the seventh day, and tertians on the fourteenth. Quartans will generally run on to the sixth week. Of the natural tendency of the two former types to terminate at about the periods just indicated, I have the strongest conviction from my own observations. The disease may not generally terminate spontaneously at these periods, but its tendency to do so will be such, that if assisted by a proper febrifuge, it will not only more certainly be arrested, but a *relapse will scarcely ever occur*, unless the remote cause continues to act on the system. Every one who has had considerable experience in the treatment of intermittents, must have been struck with the great frequency of relapses, even where the patient has been removed out of the sphere of the influence of the remote cause. From what I have observed in relation to this subject, I will venture to say, that if the usual febrifuges were withheld until after the seventh paroxysm, such an occurrence would, under all circumstances be comparatively very rare. I have already adverted to the tendency of intermitting fevers to relapse at stated intervals; and although I cannot undertake to reconcile the apparent opposition in these statements, namely, that fevers of this kind tend naturally to *terminate* and also to *relapse* at the septenary periods; yet of the truth of the observation I entertain the strongest conviction.

*Prognosis.*—The intermittents of temperate climates are among the least dangerous of febrile affections. In hot latitudes, however, they often assume a highly malignant and fatal character. Death from a simple and mild intermittent does nevertheless sometimes occur; and when this happens, it is nearly always in the *cold stage*, and with symptoms of apoplexy. I have met with two fatal instances of this kind. The violent internal congestions which occur during the cold stage, are well calculated to produce cerebral oppression and apoplexy, particularly in persons who are naturally predisposed to this malady. In general much less danger is to be apprehended from this disease in the young, robust, and vigorous, than in persons of feeble, nervous, and depraved habits of body. In individuals of the latter habit, there is sometimes not sufficient vital energy to react and develop the hot stage, and they occasionally sink into a state of lethargy or fatal apoplexy. The more irregular an intermittent is, in relation to its type and particular phenomena, the more difficult in general it is to effect a perma-

ment cure. Postponing agues are more favorable than such as anticipate their paroxysms. The latter tend to the continued form. A scabby and humid eruption about the mouth and nostrils is a favorable sign. When habitual discharges, whether natural or morbid, re-appear after having been suppressed by the ague, perfect convalescence generally soon follows. The state of the digestive functions has an important bearing on the prognosis of intermittents. So long as digestion is performed with considerable activity, and there are no decided marks of gastric irritation, very little difficulty in general will be experienced in removing the disease. But when these functions are prominently deranged, and there are manifestations of much debility of the stomach, we may calculate on meeting with considerable difficulty in our efforts to prevent the return of the paroxysms; for even should a temporary stop be put to the progress of the disease, the liability to relapse in this state of the digestive apparatus, is such as to render the best directed treatment often abortive.

Delirium seldom occurs in intermittents, and when it does happen, it must be viewed as unfavorable; and even more so than mere coma. In malignant intermittents, delirium is common; indeed, it may be regarded as almost peculiar to the worst varieties of this disease. Difficult and oppressed breathing, attended with hiccough and frequent deep sighing, is a bad sign. Sydenham observes, that a tumid and hard abdomen, with swelling of the tonsils, is in general indicative of a fatal termination. One of the most unfavorable signs is a profuse and prolonged colliquative and offensive diarrhoea. Bloody urine also is very unfavorable. The latter symptoms are almost exclusively confined to the violent intermittents of *hot climates*. When, *during the intermission*, the patient remains very much debilitated and oppressed, and the feet and legs are œdematous, considerable danger may be justly apprehended.

Tertians are in general, more readily removed than quotidians, and quotidians than quartans. Intermittents not unfrequently change into the remittent form; and this conversion is, of course, always an unfavorable occurrence. When such a change is about to happen, the paroxysms of the intermittents are progressively prolonged until they run into each other. *Simple* tertians always reduplicate their type, before they assume the continued or remittent form. The conversion of intermittents into the remittent form, is particularly favored by whatever is capable of causing or augmenting the general phlogistic condition of the system, and especially by the accidental supervention of some internal inflammation. The unseasonable employment of tonics and stimulants is frequently productive of such changes in the form of the fever.

*Causes.*—The only general cause of intermitting fever is *koino-miasmata*. Intermittents are the simplest, and in general the least dangerous of all the febrile diseases produced by this variety of miasmata. In the vicinity of marshes, we may often trace the various grades of miasmatic fevers from the most violent and fatal to the simplest and mildest varieties, as we progressively remove from the focus of the deleterious exhalations towards the circumference of its influence. On the borders of the soil, whence the miasmata emanate, if very copiously engendered,



continued and highly fatal cases of bilious fever will prevail; at a greater or less distance from this point, mild remittents will predominate; and at a still more remote situation, intermittents will be most common. From the same circumstances, the first diseases which occur in miasmatic districts are generally intermitting fevers; as the season advances, remittents occur, and finally prevail with great violence; as the cold weather approaches, and the extrication of miasmata begins to diminish, intermittents again become more common, and the remitting fevers gradually disappear.

The tendency of *koino-miasmata* to produce intermittents, is much enhanced by sudden changes of atmospheric temperature. Intermittents are never more prevalent than when the days are very warm, and the evenings and mornings cool and damp. In some instances, several weeks elapse between the reception or impressions of the miasm, and the occurrence of the fever. I have repeatedly known persons to be attacked with intermitting fever several weeks after they had been exposed to *koino-miasmata*. Persons who have been exposed to miasmata, should carefully avoid every thing capable of debilitating the system, and particularly the digestive organs, for at least two weeks after exposure.

Although *koino-miasmata* may be regarded as incomparably the most frequent cause of intermitting fever, yet various other causes may, under favorable circumstances, give rise to this form of fever. Richter observes, that worms and other causes of intestinal irritation have been known to produce intermitting fever. He mentions, also, suppressed catamenia, and hæmorrhoidal discharge, as well as the drying up of old ulcers, as occasional causes of intermitting fever. I have seen one instance, in a delicate child, where a distinctly formed ague was manifestly produced by intestinal irritation from too free an indulgence in irritating articles of food. An interesting case is related by Mr. Earle, in which a regular intermittent was produced by the irritation of a small piece of dead bone in an old wound, and which was at once arrested on removing the irritating substance. It would seem that either the generation of miasmata, or their power of producing intermitting and remitting fevers, is greatly controlled by certain occult conditions, wholly unconnected with any appreciable circumstances, with regard to atmospheric temperature, or any of the other known requisites for the production of this poison. In certain districts of the temperate latitudes, malarious fevers will sometimes disappear, or become extremely rare for a number of successive years; and then gradually become more and more common, until, in the course of a few seasons, they assume the prevalence of an epidemic; and yet, no material difference will be obvious between these periods of exemption from, and prevalence of disease, in relation to what are deemed the necessary concomitants for the production of miasmata.

*Proximate Cause.*—In relation to the proximate cause of this form of fever and of its periodicity, morbid materials collected in the system must be said to produce obstructions which act most assuredly as the proximate cause of this disease; if this is not so, we may at once confess our entire ignorance; for all that has hitherto been advanced in

relation to these mysterious subjects, amounts to nothing more, at best, than some ingenious conjectures and hypothetical speculations, with a great deal of crude and absurd reasoning and idle suppositions. As to the sentiments of Broussais, which place the proximate cause of this and all other fevers in an inflammation of the mucous membrane of the alimentary canal, it can neither be profitable nor interesting to repeat again what has already been advanced in refutation of its correctness.

*Treatment.*—The treatment of intermittents must be considered under two distinct heads; namely, that which is proper during the paroxysm; and that which is to be employed during the intermissions, and upon which the radical cure of the disease depends.

In the ordinary regular intermittents of the temperate latitudes, remediate interference during the paroxysm of the disease is extremely uncommon, and is indeed very generally altogether unnecessary. Nevertheless, where the febrile excitement becomes very violent in the hot stage; or where the system is so enfeebled that dangerous congestions and oppression occur during the cold stage, medicinal aid is not only proper, but sometimes absolutely essential to the safety of the patient. During the cold stage of an intermittent, the patient ought to be kept moderately warm; and as the thirst is generally very urgent, bland and warm drinks should be freely allowed. In general, however, *stimulating* drinks, and the application of much artificial heat, with the view of moderating the distressing sense of cold, are improper; since they very rarely lessen the feeling of chilliness, and tend often considerably to increase the violence of the succeeding *hot* stage. These observations apply to the regular disease, occurring in individuals of sufficient vital energy to develop the hot stage, without any artificial support. When the patient is feeble, nervous or exhausted, it will, generally, be beneficial to aid the vital powers during the cold stage, both by external and internal exciting agents, more especially, by the application of external heat. Without such aid, the cold stage will probably be greatly prolonged, and the system so oppressed, by internal congestions, as to prevent the regular development of the subsequent stages.

In all cases of ague and fever, the indications to be answered are—first, to put as speedy a stop as possible to the fit when it has taken place; and, second, during the intermission, to prevent its return at the usual, or any after period—both by exciting a new action in the system, by the administration of proper remedies at the commencement, or immediately before the accession of the cold fit, thereby destroying the morbid concatenation induced by the cause of the diseases, and by invigorating the body.

To effect the first of these intentions it is proper to have recourse to warm diluents, diaphoretics, fomentations, or the vapor bath, which is in general a more sure remedy, combined with the foregoing diaphoretics. By placing the patient in the bath half an hour before the expected paroxysm, and keeping up a lively steam until the period has elapsed, in many instances a cure may be effected. After which, the second intention may be completely effected with the usual stimulants and tonics.

If the complaint be of a mild form, and no other disease present, we may very safely commence the cure by giving a dose of the diaphoretic

powders, three or four times a day, to promote the secretions and excretions, which will have a tendency to restore a healthy action to the different organs; also giving a dose of the stimulating or hot bitters three times a day previous to eating. At night a red hot brick or stone quenched in cold water, may be applied to the feet, wrapped first in a wet cloth and then in a dry one, giving, at the same time, a dose of the ladies' slipper with a fourth of a tea-spoonful of cayenne with it, to promote perspiration and strengthen the nervous system.

The butter nut syrup, bitter root, or black root, may also be used to act upon the bowels. But in all violent attacks, the vapor bath and emetic, ought to be immediately resorted to, and thus cleanse and purify the whole system, with all the fluids, before the powers of life become much weakened or the tone of the organs impaired. And this process ought to be repeated every day, every other day, or at longer intervals, according to the symptoms, until the complaint be removed. As in many cases, a recurrence of the paroxysms will take place notwithstanding the best means have been used, it may be best, a little previous to the time of the expected return of the fit, for the patient to sit before a warm fire, with a blanket around him, and drink freely of a strong decoction of the diaphoretic powders, or of a tea of bayberry or some other astringent article, made very hot with cayenne, to stimulate the living power, and promote perspiration. Or the patient may retire to bed, and have a hot brick applied to the feet and side or back, and pursuing the same course, in other respects, as if sitting by the fire.

It is customary with some to commence the operation of vapor bathing, and giving an emetic a short time preceding the expected return of a paroxysm of intermittent, which often answers the best purpose, by preventing every symptom of the fit. But it sometimes happens that notwithstanding all that can be done in this way, the paroxysm comes on, and then it becomes very fatiguing and unpleasant to the patient; yet the good effects of the process are not thereby lost.

The process of vapor bathing may be often very profitably commenced when the hot stage is coming on, as perspiration is then much easier promoted than it is previous to, or during the cold stage. But in all cases where the process of steaming or vapor bathing and giving an emetic does not prevent the paroxysm, it is better to resort to this process after the fit has gone entirely off, and so long previous to the commencement of the succeeding paroxysm that the patient will be entirely recovered from the fatigue necessarily attendant on the process.

An emetic may often be advantageously administered without the steaming process; but in all bad cases, the whole process of steaming, giving the emetic, &c., is the grand dependence for effecting a cure. During the intervals, between the steamings, the patient should take of the diaphoretic powders and bitters frequently during his waking hours; and if there be much pain in the head, with restlessness and anxiety, the head must be bathed in cold water or vinegar, and doses of the nerve powder occasionally administered, as the circumstances of the patient may require. Drafts applied to the feet may also have a good effect to remove the pain in the head. These may be made by spreading the dregs of the tincture of myrrh on cloth, and apply them to the feet.

Endeavors ought also to be used by the application of hot bricks, and the administration of cayenne, to keep up a perspiration, which will have a tendency to allay the irritation and anxiety which often attend bad cases of intermittents.

To lay down definite rules applicable to the treatment of this common, and sometimes complicated malady, suited to every isolated case, cannot be expected—much must depend on the discretion and judgment of the physician in attendance. It is a point worthy of consideration in the remedial treatment of this complaint, by many judicious Botanic practitioners of the South, whose experience is certainly entitled to regard, to keep the system under the constant influence of a proper degree of stimulation.

During the cold stage, composition may be administered in moderate quantities, and repeated at intervals to suit the condition, age, and strength of the patient. If the constitution be strong and plethoric, it should be given very sparingly; but on the other hand, if the strength of the system is reduced and the patient debilitated, it ought to be given very freely.

During the hot stage, but little can be effected more than to keep the body in as quiet condition as possible—give mild diluent drinks, and if there is excessive heat and dryness upon the surface, it should be sponged with tepid water, or saleratus water. After this and the succeeding stage have subsided, the tonic treatment should be commenced; and it is highly important the system should be kept under a due degree of the proper stimulation without remission. Golden seal in repeated large doses every two hours, (say a small dessert-spoonful) will usually “break the chill.” If the golden seal is not active enough to produce the desired movements of the bowels, mandrake or bitter root may form a suitable combination to accomplish that purpose; or take a large table-spoonful every two hours of the following mixture, viz: Two and a half ounces of golden seal; one half ounce of bitter root; cayenne pepper, small table-spoonful, (all finely pulverized;) water, half a pint. Or golden seal, best yellow peruvian bark, columbo, each one ounce; cayenne and bitter root, each one table-spoonful, water half a pint. Dose, same as recommended in the formula above.

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## REMITTING FEVER.

*Bilious Fever; Saburral Fever.—Febris Pituitosa; Febris Gastrica; Febris Intestinalis; Febris Mesenterica.*

BETWEEN the simple autumnal *remittent* and *intermittent* fevers, there exists no essential or radical difference. They are produced by the same cause, and differ from each other only in the grade of violence and duration of the paroxysms. As remittents, however, assume a peculiar character, in relation both to their general phenomena and their course,



and demand a treatment correspondingly modified, they are properly made a subject of distinct consideration, although some writers, following a different course, treat of them under the same general head.

*Symptoms.*—The symptoms which occur in the forming stage of remittents, do not differ from those which usher in the intermittent paroxysm. Languor, drowsiness, a sense of anxiety, aching pains in the back, head and extremities, are the prominent symptoms of its initial stage. Slight chills are, however, often among the very first manifestations of indisposition—at first they alternate, with flushes of heat, which latter gradually increase in duration until they predominate wholly, and the febrile reaction is fully developed. When the fever is once completely established, the pains in the head, back, and lower extremities, become greatly aggravated. These pains, especially those seated in the back and legs, are sometimes so severe, as to resemble in violence, those which occur in acute rheumatism. The eyes soon acquire an icterode or yellowish tinge; the tongue becomes covered with a brownish fur; nausea, and occasionally bilious vomiting occur; a sense of fulness and weight or tension is felt in the right hypochondrium, and epigastric regions; respiration is more or less oppressed and anxious; the urine is scanty and deeply tinged with bile; the pulse is full, frequent but seldom very hard or tense, and the skin is generally dry and hot. These symptoms continue until the succeeding morning, when a gentle perspiration appear on the superior portions of the body and sometimes over the whole surface. The febrile excitement now abates, frequently, very considerably; but not so as to amount to a perfect intermission—the skin still remaining preternaturally warm, and the pulse irritated. This remission continues but a short time—not more, commonly, than from one to two hours. The febrile excitement rises again with more or less celerity, until it acquires its former violence, or, perhaps, exceeds it: which, after a certain period, again abates, and gives place to another *remission*. In this way the fever proceeds, undergoing regular revolutions of exacerbations and remissions, until it either finally terminates in a perfect crisis and convalescence, or assumes a more uniform or continued course. This description answers for the simple and usual form of the disease, as it occurs in the autumnal months of the temperate latitudes; or, for the milder remittents of the warmer climates. There is, however, no form of fever which is subject to so great a diversity, in relation to its grade of violence, as the present one. In the inter-tropical regions, it usually assumes the most fatal and violent character; and at almost every place where it is endemial, it is attended with circumstances which give it a somewhat peculiar character. It is, indeed, impossible to give any description of this disease, which can have more than a very general application. We must content ourselves with a delineation of the prominent and characteristic outlines of its physiognomy, (if I may be allowed the expression;) and with a detail of those phenomena and circumstances, which may be deemed essential, and which have a particular bearing upon its remediate management.

The ordinary mild remittents of this climate, generally assume the double tertian or quotidian type; but the former type is by far the most common; for, although the exacerbations occur once every day, yet, we

almost always find a very manifest aggravation of all the symptoms on the odd or alternate days. The exacerbations of a remittent of the quotidian type generally occur several hours earlier than those of the double tertian type—the former happening usually about nine or ten o'clock, and the latter not till towards noon, or an hour or two later.

The remissions which so generally occur in the violence of the symptoms of this form of miasmal disease, are not, however, always so considerable as to be readily perceived, either by the patient or the physician; and, in some instances of an aggravated character, they may be, for a time, altogether inconspicuous or absent. It must be observed, moreover, that they do not invariably occur in the morning or forenoon; on the contrary, instances are met with where the remissions take place in the evening or at some period during the night.

Remittents, although mild and regular in their commencement, are apt to assume an aggravated and dangerous character, if they continue unchecked beyond the ninth day, or second week. When this happens, the tongue becomes more and more loaded with a brown fur, and dry along the middle; delirium occurs more frequently and strongly; the skin acquires a deeper tinge of yellow, and a greater intensity of heat during the exacerbation; debility becomes more and more conspicuous, and the bowels distended with wind, and tender to external pressure; and, finally, in many cases, watery and offensive discharge from the bowels, retention of urine, continued vigilance, restlessness, and almost constant delirium.

In the marshy districts of hot climates, remittents rarely occur in the mild and simple form which they are wont to assume in the temperate latitudes. They generally acquire a highly aggravated and dangerous character; and under circumstances particularly favorable to their occurrence, they are apt to assume a high degree of malignity from their very commencement. Remittents of this violent grade generally make their attacks suddenly, and with great impetuosity. The cold stage is short and not often very severe. The febrile heat soon predominates and rises rapidly to a state of great intensity—and is attended with tormenting thirst, violent headache, excruciating pains in the loins and the inferior extremities, great anxiety of feeling and difficulty of breathing, with nausea, and a distressing sense of weight and fulness in the stomach. These symptoms continue for about twenty-four hours, when a remission, always very considerable, and frequently amounting almost to a perfect *intermission*, takes place. This calm, however, is but transient. A second paroxysm soon ensues, more violent and alarming than the first. The eyes now become yellow, watery, and red; the oppression and anxiety in the epigastrium is extremely distressing, and a deadly sickness, with constant vomiting or retching, torments the patient. After the lapse of some time, these violent symptoms again abate, and a clammy perspiration appears on the surface of the body. During the first two paroxysms, the bowels are, generally, torpid. In this way, the paroxysms continue to recur, until either a salutary crisis or death takes place, one or the other of which not unfrequently happens in the third paroxysm. If the disease runs on beyond the fifth or sixth paroxysm, very great prostration ensues; the remissions become less distinct; deli-

rium almost constantly attends; and the skin acquires either a peculiar stinging heat, or becomes cool and cadaverous to the touch. The pulse, in cases of this kind, frequently differs but little from its natural state; more commonly, however, it becomes quick, irregular and frequent. In this aggravated and protracted state of the disease, various other symptoms usually occur, in addition to those already mentioned, indicative of the fatal malignity of the malady. The lips become swollen, and of a livid or purple hue; the tongue dark brown, or black—fetid and clammy; the eyes red and watery, or quite dry; the urine dark brown, offensive, or entirely suppressed; the alvine discharges reddish and watery, or black, bloody or colliquative, attended generally with a tympanitic state of the abdomen; and petechia and hemorrhages occasionally occur in the last stage of the disease.

In general, the violence of the disease will be in proportion to the suddenness and vehemence of the incursion. When the attack approaches gradually with the ordinary premonitory symptoms mentioned above, the disease usually runs its course slowly. When, on the contrary, the invasion is sudden and violent, we may expect the disease to be rapid and violent in its progress. The *first* paroxysm only is usually ushered in by a very distinct cold stage—the succeeding exacerbations being rarely preceded by a sense of chilliness.

Between the mildest variety of the disease, and the rapid, vehement and fatal variety just described, this form of fever appears under the greatest diversity of grades and general character. Remitting, like all other forms of general fever, is liable to become complicated, either at an early or late period of its course, with local inflammations: and these secondary local affections constitute the chief and most important cause of those remarkable diversities which are known to occur in this disease, in different localities, or at the same place in different seasons. From some inexplicable circumstance, connected, apparently, with the peculiar concentration of character of miasmata, we find that in certain localities and seasons the disease manifests a peculiar tendency to fall, with especial violence, on some one organ or structure, as the brain, the liver, the alimentary canal, or the blood vessels, and to assume in consequence, a peculiar character in relation to its general phenomena and degree of fatality.

In general, however, two important organs—the *liver* and the *alimentary canal*, are the parts most *apt to become* prominently affected in fevers of this kind. In relation to these affections, two distinct modifications of the disease occur; one in which the phenomena of inflammation of the stomach and bowels, are especially prominent; and another modification, in which predominant derangement of the liver impresses its peculiar stamp or character on the disease. To the former, the term *gastric*, and to the latter that of *hepatic*, might, not unaptly be applied.

The remittents of the former variety, namely, *gastric* remittents, are characterized by the following phenomena, viz: redundancy of vitiated bile in the stomach and bowels; a bitter taste; a thick yellowish layer of mucus on the tongue, becoming dry, cracked, and of a dark brown or black color in the progress of the disease; total loss of appetite, and

sometimes extreme disgust for every kind of food; a turbid, yellowish urine; great weight and anxiety in the præcordia; bowels tender on external pressure, and distended with wind; great pain in the loins and knees; intense pain in the forehead; very distinct remissions: a red or fiery edge and tip of the tongue; or after the brown and black crust scales off, a smooth, shining, and red surface of the tongue; watery and reddish stools, resembling the washings of flesh; retention of the urine; difficulty of swallowing liquids in the advanced stage; great craving for cool and acidulated drinks, &c.

Those remittents which manifest predominant *hepatic* disorder, that is, *hepatic* remittents, are characterized by intense febrile heat; violent pains in the head, and early delirium: fulness and tension in the right hypochondrium: with pain and pulsation in the epigastrium and right hypochondrium; a *clean* tongue, at first; excessive irritability of the stomach; frequent and forcible vomiting, *without the ejection of any bile, the matter brought up consisting of a glairy fluid*, mixed with the drinks that may have been received into the stomach; great torpor of the bowels; a very yellow tinge of the skin and eye; and *towards the determination of the disease, a copious discharge from the bowels of a dark or pitch-like matter*. In this variety of the disease, the liver is manifestly inactive, and in a state of great sanguineous congestion. That this is the case, may be inferred from the absence of *bile* in the ejections from the stomach; the clean tongue; the sense of weight, fulness, and pulsation in the right hypochondrium; the great torpor of the bowels; the intensely yellow color of the skin; and *the excessive and continued retching and vomiting*. This latter symptom, namely, *extreme irritability of the stomach*, may be regarded as a strong manifestation of *sanguineous engorgement and functional inactivity of the liver*. We find this pathological fact exemplified in *cholera*, particularly in *cholera infantum*, in which disease there is seldom any bile whatever discharged during its early period; and the appearance of this secretion in the discharges may be hailed as a very favorable occurrence. Towards the conclusion of this variety of remittent fever, the liver frequently recovers its action and relieves itself by pouring a large quantity of black bile, or perhaps blood, into the bowels, as is manifested by the copious dark-colored or tar-like alvine discharges, which usually occur in such cases. These large and very peculiar discharges may, indeed, be regarded as the favorable *crises* of such fevers; for convalescence generally soon follows their appearance; and except the disease be arrested by remediate treatment in the early period of its course, there are but few recoveries in which such discharges do not occur. Dr. Cartwright describes an epidemic fever, which prevailed in Monroe county, Mississippi, in the autumn of 1822, which was strikingly marked by the characteristic phenomena of this variety of fever. "The disease," he says, "was generally ushered in by a distinct chill, which was speedily followed by intense heat, thirst and headache, and very severe pains in the loins. The anxiety and difficulty of breathing, the deadly sickness, sense of weight, heaviness, and pain in the stomach, increased as the fever approached its acme, until the suffering became intolerable. The exacerbations generally occurred in the evening, and a considerable remission,



amounting in some cases to a perfect intermission, took place on the ensuing morning. On the evening of the second day a sudden and unexpected paroxysm, more violent than the first one, came on, which was attended with a most horrid sensation of pain and oppression of the stomach, accompanied with deadly sickness and continued vomiting, *but with the ejection of very little fluid of any kind.* The bowels, during the first and second paroxysms, were always in a state of obstinate constipation. About noon of the third day the third paroxysm generally came on. During this paroxysm the skin usually felt rather cooler than natural, and the pulse was commonly remarkably slow. By placing the hand on the abdomen, a pulsation was felt equal to that which the heart produces in the thorax, and synchronous with the pulsations of that organ." During the first two paroxysms the tongue was but little furred; but in the third it assumed a much worse appearance, having a dark red line running from its extremity over the back part, which soon changed to black color. The skin began to acquire a yellow color during the third paroxysm. The paroxysms continued to recur until the fifth, seventh, or ninth day, when either death took place, or "enormous dark colored evacuations from the bowels occurred, and the patient commenced to convalesce."

Although the symptoms just mentioned clearly indicate very prominent disorder of the liver, it is equally evident, that in these cases, the mucous membrane of the stomach and bowels is always, perhaps, in a state of considerable irritation, and probably often of inflammation. Nevertheless, it can scarcely be doubted that the peculiar phenomena of this variety of the disease, and which distinguish it from other modifications of remitting fever, depend mainly on certain morbid conditions of the biliary organs, and which do not occur to the same extent in other varieties of the disease. More or less derangement of the biliary system, appears, indeed, to be a universal attendant on remitting fever. The tendency of miasmata to act upon and disorder the liver, has already been particularly mentioned; and it may be presumed from this circumstance, independent of the phenomena of the disease, that prominent functional disorder of the liver, constitutes one of the most constant local affections of the remitting fever.

Before I leave this part of the present subject, it may be useful to advert again to the former or *gastric* modifications of this disease, and to direct the attention of the reader more particularly to the great tendency there exists in remittents, when they are prolonged in their course, to the occurrence of a high grade of irritation or subacute inflammation of the mucous membrane of the intestinal canal. In most cases of protracted remittents, even of the mildest kinds, the abdomen becomes somewhat tympanitic, and tender to external pressure; and the character of the stools, which are often found to resemble the washings of flesh, are a further evidence of such a condition of the bowels. In a practical point of view, it is of the utmost consequence to be aware of this circumstance; for in many instances this secondary inflammation is excited by the too frequent employment of irritating purgatives, and the disease greatly aggravated and protracted by such a course of treatment.

In localities where miasmata are copiously generated, or possess great virulency, remitting fever sometimes comes on under symptoms of cerebral disorder, simulating apoplexy or mental derangement. In Italy, and the intertropical countries, the disease not unfrequently makes its attack under one or the other of these cerebral affections. Sudden and furious mania is sometimes among the first manifestations of the disease; and many patients sink, at once, into a state of insensibility and apoplectic oppression, from the vehement action of the miasmata on the brain. The brain, however, is not so apt to suffer inflammation in this form of fever, as in those which are the product of *idiomiasmata*, contagion, or atmospheric vicissitudes. This, at least, may be affirmed of the ordinary remittents of the middle latitudes; and it is probably generally correct in reference to all malarious fevers. Nevertheless, when the mucous membrane of the alimentary canal becomes inflamed, the brain usually manifests strong sympathetic irritation, by more or less violent delirium of nearly uninterrupted continuance. It is perhaps on this account, namely, the comparative infrequency of cerebral inflammation in remittents, that we do not so often observe that sudden and remarkable collapse of the vital energies in this disease, as in the fevers produced in other causes.

The ordinary remittents of the temperate latitudes often terminate in intermitting fever before the final disappearance of the disease; and it is not uncommon for the milder varieties of the disease to assume the intermittent form at an early period of their course. This conversion of form appears to be particularly favored by blood-letting practised during the first few days of the fever. Remittents also, frequently terminate in other affections; such as neuralgia; chorea; paralysis; mental weakness; organic disorder of the liver and spleen; dropsy; pain and swelling of the large joints, &c.

*Causes.*—After what has been already said under the heads of *koino-miasmata* and intermitting fever, in relation to this subject, it will be sufficient to observe, that besides *koino-miasmata*, which are unquestionably the sole epidemic source of this form of fever, there are a variety of other causes capable of producing this malady. Worms and other irritating substances lodged in the bowels, may give rise to a regularly remitting form of fever. The disease known under the term of “infantile remittent,” appears to arise from intestinal irritation. In the remitting fevers produced by causes of this kind, however, the biliary organs are much less apt to become implicated than they almost invariably are in the miasmatic remittents. Whatever may be the remote cause of remitting fever, however, it seems very evident that the principal morbid irritation is always located in the abdominal organs, and more especially in the liver and mucous membrane of the alimentary canal. So unequivocal and universal is this gastric disorder or irritation, that some eminent physicians have, in consequence of it, designated the disease by the name of *gastric fever*.

Indeed, this term appears to me preferable to that of *remittent*, which has no reference to the pathological condition of the system, and might, with equal propriety, be applied to hectic fever, which, though very

distinct from remitting fever, has remissions and exacerbations almost as conspicuous and regular as that disease.

*Treatment.*—The principal indications to be fulfilled in the treatment of remitting fever, are—first, to moderate the febrile reaction of the arterial system, by removing the morbid cause; and second, to restore the healthy functions of the different diseased organs of the system.

With regard to the fulfilment of the first of these indications, it is recommended, that a prompt and free employment of the vapor bath, in conjunction with lobelin emetics, as the best possible way. The vapor bath should be often administered, before and after the emetic at least, in order to prevent a congestion, by equalizing the circulation, and directing the determining powers to the surface. Either in local congestion, visceral inflammation, or gastro intestinal irritation, the vapor bath must be used freely, as the very best means of relief. In cases that are attended with violent pains in the head, a full, vigorous, and hard pulse, with hot and dry skin; an emetic is also unquestionably, decidedly indicated, and ought not to be neglected. In short, thorough courses of medicine should be given in quick succession, if the symptoms are violent, as long as there is any appearance of the fever, and other symptoms which clearly show that the morbid causes are not removed, not forgetting in the mean while, suitable tonics and stimulants to keep up the strength of the patient. The bowels, in all cases, must be emptied by some mild laxative; bitter root, for instance, which will seldom fail to relieve the patient very much. Drastic purges, by determining inwardly, and increasing the irritability of the stomach and bowels, would certainly be very prejudicial; and, therefore, if it is necessary to obviate costiveness in the course of the disease, laxative medicine assisted by suitable clysters, must be resorted to, avoiding all irritating substances taken as food. After the system is rid of morbid materials, the second indication may be answered by resorting to the tonic and stimulating treatment alone. Golden seal is mostly to be relied on as a tonic; it is decidedly an alterative and laxative, and these two properties combined with its tonic or stimulating quality, make it rank among the best, if not the very best, article in the *Materia-Medica*, for accomplishing the second indication. It must in all cases be remembered, that our duty as a physician is only half performed, when we have cleansed the system of morbid matter. The system must then be placed in a condition in which it will be able to resist the influences of morbid causes. Then laxative tonics, light and nourishing food, with the proper quantum of stimuli, will in all cases be necessary after the patient is convalescent.

The use of mild, cool and acidulated beverages ought to be enjoined as an important item in the treatment. Independent of the effects which such drinks have in blunting the acrimony of the fluids lodged in the alimentary canal, they exert a soothing influence upon the system, by supplying the intestinal absorbents with a fresh and wholesome fluid, and thereby preventing or lessening the absorption of irritating or vitiated matters from the bowels. Lemon and sugar are the best diluents for this purpose.

In short, never abandon regular courses of medicine as long as there

is an appearance of morbid materials in the system, and then resort to the tonic treatment, and not before. Mucilaginous drinks may be freely used.

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## YELLOW FEVER.

YELLOW FEVER has been the theme of interminable discussion and controversy—a theme which has drawn forth the best and the worst feeling of the human heart—which has furnished motives, on the one hand, for the most active exertions of philanthropy and self-devotedness, and, on the other, for all the bitterness and uncharitableness of feeling, which man, in his most degraded moments, is capable of manifesting.

There is no form of fever more variable in the violence and character of its symptoms than the present one. In the seasoned and acclimated inhabitants of those regions where the disease is endemic, it is often as mild as ordinary bilious fever. But in the young and robust, who have not yet been seasoned to the climate, it seldom fails to make its attack with an overwhelming force; commencing and terminating in death, often within forty-eight hours, and sometimes sooner.

The disease usually begins with a sudden feeling of giddiness, pain in the back, loins, and extremities, faintness and debility, with slight creeping chills and nausea. After a period varying from a few to twelve hours, these symptoms are succeeded by a sudden development of vehement arterial reaction, accompanied with a dry and intensely hot skin, flushed face, red eyes, extreme headache, tormenting thirst, intolerance of light, pain in the loins and lower extremities, a sensation of weight and tension at the stomach, white, and sometimes clean, tongue. Towards the end of the first twenty hours of fever, the patient begins to vomit frequently, particularly after taking drinks. The ejections consist, at first, of such fluids only, as may have been taken into the stomach; but after these have been thrown off, bile, often in abundance, is brought up, varying in color from pale yellow to dark green, and frequently so acid as to excoriate the fauces and lips. The heat and tenderness in the epigastrium now increase, the countenance assumes an indescribable expression of distress and hopelessness; there is great restlessness and sighing, and more or less delirium, usually, supervenes. In some cases slight pain is experienced on swallowing; “and about this time an urgent sensation of hunger often comes on, and a remarkable want of power in the lower extremities, resembling partial paralysis.” This paroxysm lasts, commonly, from twenty-four to thirty-six hours, but in some instances considerably longer; and then all the symptoms, with the exception of the nausea and the vomiting, greatly abate—the pulse returning to its natural standard, and the skin acquiring a moist and temperate condition. So complete, indeed, is the remission in some cases, that the patient is induced to flatter himself that all danger is now passed. More commonly, however, the patient remains in a state of



tranquil indifference, amounting to a sort of stupor, without any apparent concern as to present or future situation. This is an ominous calm; for, after a few hours, the pain and burning sensation in the stomach return with increased violence; the vomiting becomes frequent and distressing—the fluid brought up containing minute flakes or flocculi, resembling the crust wadded from a port-wine bottle, but little or no bilious matter. The desire for cool drinks is extremely urgent, but every thing which is swallowed is immediately rejected by the stomach, with great force. The eyes and skin about the neck and breast, now acquire a yellow hue. This second paroxysm continues, commonly, from twelve to thirty-six hours, and is succeeded by a new train of symptoms, which mark the last or third stage of the complaint. The pulse now sinks in frequency, force, and volume; the tongue is dark-brown or black; the vomiting becomes almost incessant, and exceedingly forcible—the matter thrown up consisting of a black ropy fluid resembling coffee-grounds suspended in a glairy liquid. The extremities become clammy and cold; and the acrid or burning sensation in the stomach, acquires a most distressing degree of violence. Diarrhœa usually occurs at this period—the discharges being green or black; “and the patient often complains of being unable to pass his stools, from a want of power in the abdominal muscles.” By this time the whole surface of the body is a dirty yellow color; and hicough, hæmorrhages, violent delirium, coma, insensibility, or convulsions, sooner or later terminate the patient’s sufferings in death.

Such is the ordinary course of this fatal malady. In many instances, however, the attack is much more overwhelming; the patient being seized at once with loss of muscular power, and general oppression of the nervous system—falling down as if stunned with a blow. In other instances, violent and furious delirium, or mania ushers in the disease, terminating in a few hours in insensibility and convulsions. Sometimes the disease commences and proceeds to a fatal termination in so insidious a manner, that the patient himself and those about him are scarcely aware that he is much indisposed. In such cases there is, however, always a remarkable change in the expression of the patient’s countenance, as well as his usual temper and habits. In almost all instances of this disease, the countenance is expressive of intense anxiety and despair during its early period, and of gloomy or sullen abandonment in the last stage.

The period at which the skin begins to assume a yellow color, is very variable. It sometimes occurs within the first forty-eight hours, and sometimes not until the fourth or fifth day. Various opinions have been expressed with regard to the immediate cause of this yellow hue of the surface. Some ascribe it to the serum rendered yellow by dissolved red globules of the blood, and effused under the cuticle. Dr. Fordyce attributes it to the superabundant secretion of sebaceous matter by the glands of the skin; and Dr. Saunders supposed it to depend on a peculiar state of the lymph in the subcutaneous cellular tissue. Many, however, maintain, and with correctness, I think, that the yellow hue, in question, is of an icteric character, depending entirely on the deposition of bilious matter under the cuticle.

The black matter thrown from the stomach in the latter period of this disease, does not consist of bile, as was once generally supposed, but of minute flakes of coagulated blood suspended in the gastric mucus, produced by sanguineous exhalation from the abraded surface of the mucous membrane of the stomach. The black matter discharged in some of the higher grades of bilious and typhus fevers differs essentially from the black vomit of yellow fever. The former will dissolve in water, and communicate a deep bilious tinge to it; whereas the black matter which forms the *black vomit* of the present disease, consists of small insoluble flakes, which are held suspended in a viscid fluid, and will not communicate a yellow or greenish tinge to water when agitated with it. In taste also they differ. The black matter which occurs in common bilious fever, is always intensely bitter; but that which is thrown up in yellow fever, is either insipid or acid.

*Post Mortem Appearances.*—The stomach and liver are the organs upon which the disease exerts its principal force. The former especially, always shows the strongest marks of previous inflammation and its consequences. Its coats are often thickened, and the mucous membrane is always strongly injected, abraded, and in many parts gangrenous, or totally disorganized. The duodenum and small intestines also almost invariably exhibit marks of inflammation. In many of the more aggravated cases, the liver undergoes much structural derangement. Dr. Chisholm has found the liver in a dissolved or putrid state or sphacelated, and of the consistence, feel, and color of rotten cork, or full of abscesses. Dr. Physick rarely found the liver much diseased, but the stomach was always inflamed and gangrenous in parts.

*Cause.*—In relation to the origin and mode of dissemination of yellow fever, physicians have been at great variance; and the subject is still much disputed, although the weight of good testimony, is greatly on the side of its miasmatic or domestic origin. After an attentive examination of the principal observations which have been published on this subject, it appears, indeed, difficult to adopt any other opinion, than that which alledges its origin from miasmatic effluvia, exhaled from masses of public filth containing putrescent matter, generated under a high range of temperature. That this is the case, seems to be sufficiently demonstrated by the following circumstances: 1. Yellow fever, always appears in the lowest and most filthy parts of towns; and those localities in which it is most prevalent, are in the immediate vicinity of marshes or soils favorable to the production of miasmata. 2. Yellow fever never occurs in cold seasons—a high range of atmospheric temperature being essential to the generation of its cause. 3. Heavy rains, storms, and the supervention of cold weather, never fail to put an immediate check to the disease. 4. Yellow fever always appears simultaneously, and is intermixed with bilious remittents. Dr. Ramsay states, that in the yellow fever of Charleston, in 1804, neglected intermittent frequently terminate in yellow fever. Dr. Rush, also states, in relation to the yellow fever in Philadelphia, 1802, that intermittents, the mild remittent, the inflammatory, bilious, and the malignant yellow fever, have, in many instances, all run into each other; and, he observes, that Dr. Saunders, nearly a century ago, noticed this conversion of marsh and yellow fever

into each other. Yellow fever is, moreover, always most severe in the immediate vicinity of those localities which favor the generation of marsh miasmata. Dr. Caldwell speaking of the yellow fever of Philadelphia, in 1803, says, as the fever receded from the low ground and malignant atmosphere of Water street, it became more and more mild and manageable till its evanescent shades in Second street, were in many instances, much lighter than the common remittent of the country. During the prevalence of the yellow fever in Baltimore, the bilious or remitting fever in its ordinary form, prevailed in that town, and continued until it was gradually lost in the severer form of yellow fever as the season advanced. 5. The miasmatic origin of the disease may be inferred also from the fact, that the recurrence of it has often been, in a great measure, prevented by removing the sources of pestiferous exhalations, in situations where it formerly prevailed, almost annually, to an alarming extent. If these views be correct, in relation to the origin of the disease, we are forced to reject the opinion so stoutly maintained by some, of its being in any respect contagious. Indeed, if yellow fever did possess the power of generating its own virus, and communicating itself by contagion, the fact, as Dr. Bancroft observes, must have been proved ten thousand times by the most irrefragable testimony, and yet there is, perhaps, no *incontestible* case on record where the disease was thus communicated. The city hospitals established in the neighborhood of Philadelphia and at New York, furnish us with a striking refutation of the supposed contagious nature of this disease; for, in no instance, was the disease communicated to those who were employed about the sick. The same observations were made at the encampment near Baltimore, during the prevalence of this disease, in that city in 1819. The recent very ample investigation of this subject by Dr. Chervin, has resulted in a mass of testimony, which can scarcely leave any pretext for doubting the non-contagious nature of this disease. But, although yellow fever be not contagious, it may, no doubt, be introduced into seaport in ships. Unquestionably, a pestiferous miasm may under favorable circumstances, be generated in the holds of ships while navigating in hot climates; which, when suffered to escape at the wharves, may give rise to the disease in question. When the miasmata are thus introduced, however, the disease engendered by it will not prevail epidemically, but only among those who approach the infected vessel, or the cargoes, and will disappear entirely when these are removed to a distance. The sporadic cases which occurred at the Wall, about 1804, at Perth-Amboy, in 1811, at Middletown, in Connecticut, in 1819, and at New York, in 1824, were distinctly traced to vessels that had recently arrived from warm climates. The circumstances of the ship Ten Brothers, at Boston, in 1819, afford a striking example of the production of deleterious miasm in the holds of ships, capable of producing yellow fever. This vessel having arrived at Boston on the first of August, a number of persons went on board while the cargo was being discharged; and out of these, twelve individuals, living in various parts of the city, were seized with malignant fever, nearly all of whom died. The disease was not, however, communicated to a single person of those who visited the sick.

Observations would seem to show, that those who had once suffered an attack of this disease, are afterwards in a great degree insusceptible of another attack. In hot climates, where the disease is endemic, persons recently arrived from more temperate latitudes, are almost exclusively obnoxious to this disease. The acclimated are, in a great degree, exempt from its attacks, and when it does occur in such individuals, it almost always is of a comparatively mild and tractable character. Exceptions, however, to this general rule were very strikingly manifested during the ravages of the yellow fever in Mobile, in 1839. The influence of the remote cause of this form of fever is greatly promoted by intemperance, excessive exercise in the sun, exposure to a damp and cold night air, and, in short, by whatever is capable of debilitating either the whole system, or deranging important organic functions.

*Treatment.*—If yellow fever has been a fertile subject of dispute in relation to its pathology and cause, it has afforded no less scope for contention, with regard to its remediate management. Whilst some recommend, strenuously, a prompt and energetic treatment, others advise mild and soothing remedies. However, it has never been managed satisfactorily by the old physicians, either by a mild or rigid treatment. When this form of disease made its appearance in Charleston, in August, 1838, Dr. Nardin declared, that cases he treated with Botanic remedies, yielded to his means as readily as any other form of acute disease. He lost no case where he had the sole management. So with the lamented Griffith, of Augusta.

The treatment must be rigid in the outset of this disease, from the fact that after it has run any length of time, very great debility is induced. An emetic should be administered every ten hours, at least; the bowels evacuated and kept open by the constant use of some mild aperient medicine. Hepatic medicines are decidedly indicated, and should be administered freely. The bath can by no means, be dispensed with; it should be applied before and after each emetic, or as often as it may be deemed expedient, for the purpose of relaxing the constricted capillaries. A decided tonic treatment should not be resorted to as long as there is any degree of fever. After the fever has abated, then it will be altogether necessary to put the patient on the tonic and stimulating treatment, and not until then. Immediately after the operation of the emetic, it will be highly proper to administer a portion of laxative bitters for the purpose of toning and strengthening the stomach. Let the system be cleansed first of morbid matter, and then the tonic treatment is not only allowable, but altogether necessary. Notwithstanding emetics are generally condemned by the old school practitioners, they do, unquestionably, moderate the febrile excitement, predisposed to perspiration, and relieve gastric distress.

When there is much irritability of the stomach and bowels, weak lobelia tea, given in sufficient quantities to nauseate a very little, may be administered with considerable advantage. Besides this means for allaying the irritation of the stomach and bowels, and restraining the retching and vomiting so distressing in this form of disease, the cold dash following the vapor bath, will have a decidedly good effect.

Thorough courses of medicine, in the incipient stage of this form of



disease, cannot be too strongly recommended. If the steamings are kept up for any length of time the yellow tinge will soon leave the surface, and it will resume its proper color. By this means, local congestion will also be obviated by equalizing the circulation.

Diuretics may not be amiss, in this form of disease, at least, if there is any great suppression of urine, they may be administered with much advantage.

It is proper to state that where the patient is convalescent, light nourishing food, with tonics and stimulants may be used freely without danger.

## CONTINUED FEVER.

ALTHOUGH the varieties of fever which arranged under the present general head are termed *continued*, in contradistinction to the forms of fever just considered; yet, with the exception of the *ephemera*, a fever strictly *continuous* or unremitting in its course, is in reality a phenomenon of the rarest occurrence. Whether the operations of the animal economy be carried on in a state of health or of disease, regular periodical fluctuations appear constantly to obtain in the excitement or actions of the system. In every form and variety of fever, there seems to exist a natural tendency in the general morbid excitement or symptoms, to remit or abate in their violence at some period during the day; and this remission, in perhaps ninety-nine cases out of a hundred, occurs during the morning. In the fevers denominated continued, however, these temporary abatements in the violence of the symptoms are generally slight, and frequently very transient; they usually occur very early in the morning, and seem to be the result of the abstraction of the stimulus of light, sound, &c., during the night, in conjunction with the natural tendency of the actions of the system to abate at this period.

Continued fever occurs under a variety of prominent modifications; and under every grade of febrile excitement, from the feeble and sinking reaction of typhus, to the vehement and tumultuous actions of synochal fever. Agreeably to this circumstance, it has been customary to divide continued fevers into *sthenic* and *asthenic*, or *inflammatory* and *typhus*. That there exists no very material difference between the low fevers denominated typhus, and those usually termed inflammatory, is quite obvious. The term inflammatory, nevertheless, does not seem to be strictly appropriate as a *distinctive* appellative in this place; for that irritated excitement which constitutes fever is always necessarily inflammatory in its general character, whether the reaction be feeble and sinking, or vigorous and ardent. Mere grade of energy or activity, is to be regarded as an accidental and variable quality of inflammatory excitement. Fever consists essentially in an irritated action of the sanguiferous system, and this irritated condition may be connected either with *increased* or *decreased* energy of the vital powers. In pure synocha, the

heart and arteries are in a state of morbid action, with diminished powers of acting; whilst in typhus fevers the general irritated excitement is connected with *fundamental debility* of the vital powers. In either case, however, the irritated vascular action is essentially phlogistic, and equally prone to give rise to local inflammations. The diversities which occur in the general character of continued fevers, depend mainly on the differences which occur in relation to the degree of vital energy enjoyed by the system, and this diversity in the general energies of the system itself, would seem to depend on the greater or less degree in which the nervous system becomes implicated in the disease. The brain is the fountain whence the animal economy draws its powers of action, and whenever this source of the vital forces becomes injured or impeded in its operations, debility, corresponding to the degree and character of the cerebral affection, will be manifested in the actions of the system. In the high and vigorous synochal fevers, there are rarely any considerable manifestations of cerebral disturbance; whereas, in all those fevers which are attended with prostration or feebleness, the brain and nerves are generally prominently disordered throughout the whole course.

There exists no small degree of difficulty in arranging continued fevers under such heads as will exhibit a distinct and comprehensive view of all the prominent modifications or forms in which they are wont to occur. In relation to the *grade* of febrile excitement, fevers may be divided into *three* principal varieties: namely, *synocha*, *synochus*, and *typhus*.

1. *Synocha*.—This head embracess all those fevers which are conspicuously *inflammatory*, both in relation to their general and local phenomena. They are usually divided into *idiopathic* and *symptomatic*; the former, constituting what is generally termed simple *inflammatory* fever; and the latter embracing those fevers which result from acute local inflammation. Hardness, quickness, and tension of the pulse, are essential characteristics of *synochal* fever; but in relation to the size and activity of the pulse, there exists great diversity in the different varieties of this grade of fever. In simple inflammatory fever the pulse is *full*, vigorous, and hard; whilst in some of the phlegmasia, in acute gastritis, enteritis, and peritonitis, its volume is usually small, although its firmness, tension, and quickness are conspicuous.

In *synocha*, the general energies of the system manifest no proneness to prostration, so long as the fever retains its *simple* character. The powers of vital resistance continue to the end, with no material impairment. When general fever of the *synochal* grade passes into a low or typhoid state, it is either in consequence of inordinate sanguineous depletion, or of the supervention of cerebral inflammation, or the occurrence of inflammation and gangrene in other organs.

Simple continued fever of the *synochal* grade, is rarely attended with conspicuous symptoms of sensorial disturbance, or cerebral irritation; nor is it common to meet with signs of gastro-intestinal irritation in cases of this kind. Fevers, however, rarely preserve the simple *synochal* character throughout their whole course. In most instances, local inflammation supervenes in some part or other. When the inflamma-

tion falls upon a fibrous structure, or upon one of the solid viscera, the energy of the febrile reaction will be increased, or at least sustained; but when it happens to appear in the mucous membrane of the alimentary canal, the brain generally becomes more or less oppressed, and the general powers of the system tend to a state of prostration.

The secretions in synocha are almost universally diminished in quantity. Cold or atmospheric vicissitudes, and a high degree of solar heat, are almost the only *general* causes of this grade of fever.

*Synochus*.—This grade of fever is intermediate between the purely synochal and the typhus varieties of fever, and constitutes by far the most common modification of febrile reaction. It is the grade of fever which occurs in intermittents, remittents, bilious fever, and the common continued fevers which arise from *cold* and from gastric irritation. The pulse of synochus fever is active, more or less full, frequent, compressible, and free from unusual tension or hardness.

Synochus is employed here as indicating merely a certain grade of febrile excitement, and not as constituting in itself a distinct form of fever. The reaction of the heart and arteries is only one of the series of morbid phenomena which constitutes fever, and the same grade of vascular reaction occurs in maladies essentially distinct from each other. So far, indeed, as the mere action of the heart and arteries is concerned, fevers differ from each other only in *degree*; or, to adopt the language of Parry, in the greater or less momentum of the blood. It is in the capillary system of vessels, that the fundamental morbid condition resides, which establishes the essential difference of febrile diseases. The morbid excitement of the capillaries in a case of small-pox must be very different, one should think, from that which occurs in this system of vessels in the remitting fever, and both may nevertheless be attended with the *synochus* grade of febrile reaction.

*Typhus*.—This grade of fever is lower than the preceding one, the vital powers being more prone to sink, and in general much less able to resist the influence of debilitating remediate measures. It is characterized by a weak, small quick, and generally frequent pulse. In some instances, however, of a typhus state of fever, the pulse is nearly natural in frequency and fullness; but softness and feebleness are seldom absent, except in the commencement of the disease. An early disturbance of the sensorial powers, and a train of various nervous symptoms, almost universally attend fevers of the typhus kind.

There are three apparently very distinct varieties of typhus fever. One of these varieties is characterized by what may be called a highly nervous state of the system—the patient manifesting along with a weak condition of the vital powers, a peculiar degree of nervous excitability and excitation, and an active state of the sensorial functions. This constitutes what was formerly usually described under the name of nervous fever.

Another variety of *typhus* fever in connection with the deficient or sinking energies of the system, is characterized in its progress by phenomena which have been generally regarded as indicative of a tendency to putridity; the pulse, at first moderately full and active, soon becomes soft, feeble, sometimes *frequent*, and at others slower than natural, the

skin is pale-dingy, or sallow, its heat elevated, in some instances nearly natural, and sometimes even below the natural standard. The breath, secretions, and exhalations, are offensive to the smell, petechiæ, extravasations, colliquative hæmorrhages from the gums, the fauces, the eyes, the bowels, &c., ensue towards the conclusion of fatal cases.

There is a *third* variety of low fever, which, along with its radical tendency to prostration, is strongly characterized by a very *conspicuous torpor of the sensorial, intellectual, and general nervous functions*. Its first stage is often attended by the *synchus* grade of vascular reaction, whilst the second stage is marked by torpor, great prostration, and feeble arterial action. Its different stages are more definite in their duration, and its essential phenomena succeed each other in a more regular order than those of other continued fevers. This constitutes the genuine *typhus*—a form of fever which by many is believed, and I think with correctness, to be radically diverse from every other form and variety of febrile disease.

Having made these general remarks on the principal grades and modifications of continued fevers, I pass on to the consideration of particular forms of fever.

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### SIMPLE INFLAMMATORY FEVER.

THIS variety of continued fever is attended with the highest grade of febrile excitement, associated with increased *irritability*, as well as *increased power of action* in the heart and arteries. The premonitory stage is always short, the fever coming on suddenly with distinct chills or rigors, the febrile reaction is rapidly developed, the whole surface becoming speedily intensely hot, the pulse full and vigorous, and rarely above one hundred and twelve in a minute, the face flushed and turgid, the eyes suffused, sparkling, and unusually sensible to the light, the temples and carotids throbbing, the head painful, the mouth and throat very dry, the breathing oppressed and hurried, the thirst for cold water very urgent, the tongue covered with a white fur, the bowels torpid, the urine very high-colored, and small in quantity, the skin dry, harsh and suffused with a slight blush, and the ears morbidly sensible to sounds. Delirium is not a usual occurrence in this variety of fever; but when it does supervene it generally becomes extremely violent, and greatly increases the unfavorableness of the case from its dependence, generally, on cerebral inflammation.

These symptoms usually suffer regular remissions and exacerbations; the former occurring in the morning, and the latter in the evening, until they finally terminate entirely under some critical evacuation. Simple inflammatory fever, very rarely continues beyond the ninth day, and still more rarely beyond the fourteenth, and not unfrequently terminates its course as early as the fifth or seventh day. When the termination occurs about the seventh day, the symptoms usually go on increasing in



violence to the fourth or fifth day; and when the disease is prolonged to the fourteenth day, the increase generally continues to the ninth, or perhaps the eleventh day.

The resolution of inflammatory fever is almost invariably accompanied by general and free perspiration, together with its never failing concomitant, a reddish or pale sediment in the urine. In some instances, a slight hemorrhage, particularly from the nose, accompanies the crisis. In general, these critical discharges, take place a few hours after an evening exacerbation, and this exacerbation is often ushered in by a slight chill.

Inflammatory fever does not, however, often continue its course throughout in the regular and simple form which has just been described. Topical inflammations, of more or less intensity, very seldom remain wholly absent in the progress of the disease. The human system is rarely in such a condition as that some organ or structure is not in a state of predisposition to inflammation; and there can scarcely be a circumstance better calculated to produce inflammation in a part thus predisposed, than the very greatly augmented momentum and peculiar condition of the blood, which exist in this variety of fever. When local inflammation supervenes in the course of a simple fever, the general aspect and disposition of the disease will, of course, be considerably altered. Sometimes the brain and its meninges become inflamed, at an early period of the disease; but this occurrence is much less common in the synochal, than in the synochus and typhus grades of idiopathic fever. Occasionally synochal fever, after having continued for a day or two, becomes complicated with rheumatic inflammation; and in some instances inflammation occurs in one or more of the thoracic or abdominal organs. In general the more the brain becomes affected, either by inflammation or sympathetic irritation, the more apt will the system be to sink into a state of prostration or oppression. When the febrile reaction is extremely vehement, or the system habitually delicate and feeble, simple inflammatory fever sometimes exhausts the vital energies, and passes into a low or typhoid state.

The constitutional predisposition to synochal fever would seem to consist in a vigorous condition of the vital powers, robust health, activity of the digestive and nutritive functions, and an irritable plethoric habit. Persons between the fifteenth and fortieth year of age, of a sanguineo-athletic temperament, appear to be most liable to fever of this vehement character. In early infancy, and in old age, simple inflammatory fever is not so often found to occur as during the intermediate periods of life.

*Causes.*—The exciting causes of inflammatory fever are very various. This grade of fever may be produced by cold, atmospheric vicissitudes, high solar heat, the intemperate use of spirituous liquors, too free an indulgence in high-seasoned and irritating articles of food, the sudden suppression of natural or habitual evacuation, excessive corporeal exertions, a draught of cold water when the body is heated by exercise, violent passion, mechanical injuries, &c.

Of all these causes of synochal fever, however, *cold* is by far the most common. It is from an extensive influence of this febrile cause that continued fevers of a synochal grade are so common in cold and variable

climates, and during the cold and changeable months of spring and autumn in the temperate latitudes. During the summer months we seldom meet with general fevers of a very phlogistic character; and pure synochal fevers are perhaps still less common in the intertropical climates. Prevailing northwest and northeast winds are particularly favorable to the occurrence of inflammatory fevers. So remarkably is this the case, that typhus fevers will sometimes assume for a time, a decidedly phlogistic character, if the wind shift suddenly from a southern to a northern point. May not the *electric* changes of the atmosphere have some agency in the production of this effect? From the influence which atmospheric vicissitudes and sudden variations in the direction of prevailing winds are sometimes found to have on patients and convalecents confined in close chambers, or even in bed, this supposition does not seem to be improbable. There are, indeed, some writers who contend that a superabundance of electricity in the atmosphere constitutes the cause of epidemic inflammatory fevers. Hopf observes, that fevers of this kind are always most apt to prevail during those seasons and meteorological conditions, when the atmosphere is most charged with the electric fluid. Reil thinks that electricity often contributes considerably to the production of phlogistic fevers by increasing the general irritability of the system.

It may be observed, however, that the grade or modification of a fever, does not depend so much on the character of the *remote or exciting cause*, as upon the peculiar condition of the *animal system* at the time the cause exerts its morbid influence. Thus, the same degree of cold may produce a low or typhoid fever in one, and a vehement inflammatory fever in another individual—a circumstance which proves unequivocally that such diversities depend mainly, and often wholly, on the peculiar predisposing condition of the body itself.

If of two individuals seized with fever from the same atmospheric vicissitude, one be especially prone to inflammation of the brain, or of the mucous membrane of the alimentary canal, and the other to inflammation of the fibrous and serous structures, or be wholly free from any local predispositions of this kind, the fever will most probably early assume a low or typhoid grade of vascular reaction in the first, whilst in the latter it will be apt to retain its vigorous synochal character throughout its course.

When speaking of the general character and etiology of fever, I observed that in simple inflammatory or synochal fever, the principal febrile irritation is, probably, located in the vascular system—that is, in the internal membrane of the heart, arteries, and capillaries. In those general inflammatory fevers which arise from the influence of cold, at least, this is probably the case; for, in instances of this kind, besides the internal congestions and inequilibrium of excitement resulting directly from the impressions of this cause, a large proportion of the recrementitious elements of perspirable matter must remain mingled with the blood, (unless speedily removed by the vicarious action of some other emunctory,) and necessarily impart to this fluid qualities which are not natural to it. Most assuredly the retention of materials which have become useless to the system, and for whose constant elimination nature has provi-

ded so extensive a series of emunctories as the cutaneous exhalents, cannot be long tolerated by the animal economy with entire impunity. The blood is the natural stimulant of the sanguiferous vessels, and we must believe that its stimulating qualities are naturally in due and harmonious relation with the sensibility and irritability of its appropriate vessels. When, therefore, in consequence of suppressed perspiration, this fluid becomes surcharged with the elements of rectementitious perspirable matter, its natural relations with the heart, arteries, and capillaries will be destroyed, and irritation more or less intense must almost necessarily ensue. Why such a cause should produce typhoid fever in one, synochus in another, and pure synocha in a third individual, we may not be able to ascertain; but the grade of fever is, no doubt, determined by the particular condition of the system in relation to accidental or habitual debility, local disorder or predisposition, temperament, modes of living—in short every thing which constitutes a deviation from perfect health.

That the degree in which the sensorium commune becomes implicated, has an important share in determining the grade of febrile reaction, has already been observed in several places. It would, indeed, seem very reasonable to conclude, that as the powers of the system depend mainly on the regular supply of the nervous influence, the more the brain, its fountain, becomes involved in disease, the feebler will be the powers of the vascular and muscular systems. All low or typhoid fevers, in truth, are characterized by early and conspicuous manifestations of cerebral disturbance, and the prostration, and encephalic disorder generally increase very gradually. In fevers of the synochal grade, on the contrary, the brain and nerves suffer but little; and, when inflammation of the brain does supervene, the system and vascular reaction soon sink to a lower grade.

The prognosis in simple inflammatory fever is, in general, favorable. This, indeed, may be regarded as the least dangerous of all the varieties of continued fever, so long as it retains its simple form. When local inflammation supervenes, the danger will be more or less increased, according to the importance of the organ or structure in which the inflammation occurs, or the variety and force of its sympathetic connections, according also to the intensity of the inflammation. When the breathing is free, and without cough or pain in the chest, and the abdomen neither tender nor tense to the touch, we may conclude that the fever is not of a dangerous character, from the almost certain absence of thoracic and abdominal inflammations. Slight delirium during the exacerbations is not to be considered as a very unfavorable symptom; when it becomes very violent, however, it betokens encephalic inflammation; and, of course, indicative of greatly increased danger. Richter says, that a very profuse discharge of limpid urine, occurring suddenly; liquid or watery discharges from the bowels; and very copious sweats without sedimentous urine and abatement of the symptoms, constitute very unfavorable signs in synochal fever.

The signs which announce a favorable change are, the occurrence of slight hæmorrhage from the nose; general perspiration, attended with pale urine, becoming turbid when cool; and diminution in the frequency, hardness and activity of the pulse, and in the febrile temperature of the surface.

*The Synochus grade of Idiopathic Fever.*—Common Continued Synochus Fever.—The ordinary continued fevers, those which are most frequently in practice, though phlogistic in their character, do not manifest that intense grade of inflammatory excitement and permanency of vital resistance which characterize the variety of fever described in the preceding section. In the simple continued fevers which form the subject of the present section, there exists, as in pure synocha, strong febrile reaction; but the vital powers are not sufficiently sustained to enable them to maintain this elevated and energetic grade of morbid excitement—and hence, although the fever may commence with a degree of vascular reaction and general strength differing but very little from synocha, yet, both the grade of febrile excitement and the general powers of life will soon decrease conspicuously, and verge to the low or typhoid state.

The principal sources of this modification of continued fever are, *cold* or atmospheric vicissitudes, and irritation or disorder of the alimentary canal and of the biliary organs. *Cold*, however, is decidedly the most common source of the ordinary continued fevers of the temperate and more northern latitudes. When the disease arises from this cause, it is generally more phlogistic in its early periods, than when it occurs as the consequence of gastro-intestinal disorder or other febrific circumstances. An early occurrence of nausea, vomiting, foul tongue, and disagreeable gastric sensations, are among the most frequent symptoms of common continued fevers. In this respect, common continued fever of the synochus grade, differs from synocha or pure inflammatory fever; the latter being but rarely attended by very manifest signs of gastric disturbance.

Simple continued synochus fever occurs under various modifications, many of which have been described by authors as distinct varieties of fever. The ordinary continued fevers of our cold and variable seasons, depending on the febrific influence of low temperature or sudden atmospheric vicissitudes, occur under various grades of violence from the simple febrile state called a cold, to the most aggravated fever tending rapidly to cerebral oppression and fatal collapse.

In the mildest modification, a slight and transient feeling of chilliness is succeeded by a moderate increase of heat on the surface; a white tongue; some increase in the frequency, quickness and fulness of the pulse; corporeal and mental languor; dryness of the skin; more or less pain over the eye-brows; a red and slightly diminished urine; slowness of the bowels and disturbed sleep. In some instances, the appetite is but little impaired, but most commonly it is suppressed. This grade of fever generally passes off in a few days, under a gentle perspiration or moderate diarrhœa.

The modification, however, which is especially designated by the name of common continued fever, is, by no means, so mild in its symptoms or so transient in its duration, and may be considered, in its more aggravated character, as one of the most formidable of general febrile maladies. This modification of the disease is generally ushered in by a distinct cold stage, characterized by great lassitude, restlessness, a feeling of tension, and confusion in the brain, oppressed and anxious



breathing, feebleness and quickness of pulse, a clammy tongue, disgust for food, flatulency, and frequently nausea, retching, or vomiting. This stage, alternating towards its conclusion with flushes of heat, often continues for many hours before the stage of excitement is fully developed. The skin now becomes hot, dry, and suffused with a uniform, but slight tint of red; the pulse more frequent, full and active; the face flushed; a dull, heavy, or throbbing pain is experienced in the head; the patient is restless, morose, or peevish, and feels unable to fix his attention, or to exert his mental faculties; his tongue is at first white, becoming dry, harsh, and dark-brown as the disease advances; the urine is generally red, sometimes pale, and wholly without sediment; the bowels are torpid, and the alvine discharges soft, and often of a clay-colored appearance. There is, generally, from the beginning, some degree of intolerance of light and sound, and the carotids and temporal arteries usually beat strongly. These symptoms commonly go on for five or six days without any material changes, except the slight remissions and exacerbations which occur in the morning and during the night. Slight delirium commonly occurs during the night for the first five or six days; as the disease continues, however, the symptoms of cerebral disorder become more and more conspicuous, so that, by the eighth or ninth day, it arrives at its acme, and either gradually declines under a favorable crisis, or passes more or less rapidly, into a *typhus* condition or *collapse*, attended with almost constant delirium, partial stupor, dilated pupils, dry, foul, and dark-brown tongue, sordes about the teeth, hurried breathing, subsultus tendinum, picking at the bed clothes; the pulse becoming progressively weaker, smaller and more frequent, and the vital energies sinking more and more until death takes place about the fifteenth, or perhaps the seventeenth day, and sometimes not until a later period.

In some instances of common continued fever, the symptoms of cerebral irritation are considerable at an early period of the disease, and the nervous or *typhus* stage supervenes rapidly and under a highly aggravated train of phenomena. With the development of the stage of excitement, which comes on slowly after a protracted and oppressive cold stage, strong manifestations of cerebral disorder ensue. The patient evinces great aversion to light and sound; he is tormented by uninterrupted watchfulness; his mind is greatly confused; delirium comes on early, and soon becomes continuous and often violent; the countenance is flushed; the carotids beat strongly; the vital and voluntary powers are oppressed; the skin is intensely hot; the whole surface of the body is frequently tender or sore to the touch, and transient darting pains are often experienced in various parts of the body. "An extreme irritability of the nervous system attends the development of the fever; the arms are tossed to and fro on the bed; the head is moved from side to side, and the position of the lower extremities frequently changed." Flatulency and irritability of the stomach, with more or less of tenderness to pressure in the epigastrium, are rarely absent. The pulse is at first frequent and active, but seldom very firm or tense. The *typhus* state generally comes on as early as the fourth or fifth day, and in some instances much sooner. When this happens, the pulse becomes smaller and more frequent: the previous high delirium passes into a low mutter-

ing raving, and, finally, into a completely oppressed state of the sensorium, tending rapidly to a general prostration of the vital powers. The patient now lies on his back; moans, with his mouth open, and the eyes turned up under the lids. The retina seems insensible to light; one eye appears smaller than the other, from paralysis of one of the upper lids; the muscles of the face are variously agitated; the pulse becomes extremely rapid and small, and a clammy but warm sweat breaks out. The extremities finally become cold, the urine and feces are discharged involuntarily, and life ceases either gradually or suddenly in a paroxysm of convulsions.

Dr. Armstrong very truly observes, that in this latter and aggravated modification of the disease, acute or subacute inflammation of the brain is unequivocally present "soon after the full emergence of the fever." He has not, however, paid sufficient attention to the same condition of the alimentary canal. In the early period, and even before the stage of excitement ensues, nausea, retching or vomiting, total disgust for food, and various other disagreeable sensations in the abdomen are scarcely ever absent; and in the more advanced stages, tenderness or soreness on abdominal pressure, a tympanitic state of the bowels, a foul tongue, with red edges, indicate with sufficient certainty the presence of gastrointestinal inflammation. In some cases, subacute inflammation is developed in the respiratory passages, and occasionally also in other parts of the body, according to the accidental local predispositions which may exist.

There are some other modifications of continued fever of the synchus grade, which it will be proper to notice in this place. When cold acts on a system which has been previously much under the influence of *koino-miasmata*, it will sometimes give rise to continued fevers of a manifestly bilious, or what has been called gastric character. Lassitude, a feeling of weight, tension, and dull pain in the head, depraved or obliterated appetite, acid or bitter eructations, a sense of fullness and weight in the stomach and right hypochondrium, a sallow or icterode countenance, a gloomy, taciturn disposition of the mind, transient pains in the abdomen, constipation, or bilious diarrhœa, with occasional slight creeping chills, are the phenomena which usually usher in the febrile attack. The heat of the skin rarely becomes very intense; the pulse is full, wavering, active, but very compressible, and seldom above 112 during the first few days of the fever; the eye is tinged with bile, and in the progress of the disease a more or less icterode hue extends over the whole surface of the body. The skin is frequently moist about the heart and breast, but general or uniform perspiration hardly ever occurs before the resolution of the fever. The tongue is bitter, and covered with a thick, yellowish slime, generally moist at first, but dry, rough, and dark-brown in the latter stage of the malady. The urine is highly charged with bile and small in quantity. Nausea, retching, and vomiting, always occur, and the patient loathes all kinds of food; the desire for cool and acidulated drinks is generally urgent. The breathing is oppressed, and a short humid cough usually attends; its course is seldom very protracted, but its tendency to the *typhus* state is almost always exhibited at an early period, and unless the disease be mild, or

speedily subdued, delirium, with the whole train of nervous symptoms mentioned above, and great prostration supervene by the 3d, 5th, or, at furthest, the 9th day. The remissions and exacerbations are always very conspicuous.

There is still another modification of continued fever of the synochus grade; which arises from the undue influence of a damp and cold air; deficient, innutritious, depraved and equineous diet, mental depression, &c. The premonitory stage is long, but the fever itself varies in duration from five or six days to so many weeks. The pulse is often nearly natural in point of fulness and activity, but generally somewhat accelerated; the thirst is moderate, the appetite weak or entirely lost; the patient is torpid and drowsy; and the eyes are dull and watery; nausea frequently occurs, particularly in the morning; the heat of the surface is considerable; the tongue is white, slimy, and the taste is flat; the urine is pale, crude, and moderate in quantity, and generally surcharged with mucus. As the disease advances the pulse becomes weaker, smaller, and more frequent; delirium of a low muttering kind ensues, with hiccough, twitching of the muscles, and at last coma. The fever does not, however, always run into the nervous state. In some instances a general diaphoresis, and a mucous deposit in the urine occurs about the 7th or 9th day, and leads to a slow convalescence. There is generally more or less tenderness in the abdomen.

All the foregoing modifications of continued fevers, but more especially the second, have been confounded with genuine typhus. Dr. Armstrong has pointed out the distinctive characteristics of these maladies, and though he has since changed his sentiments with regard to the etiology and essential nature of typhus, the diagnosis which he has given between these two diseases, is nevertheless founded, I think, on sound positions.

In typhus the sensorial functions are earlier and more invariably disturbed, and the muscular prostration is greater than in the most common forms of continued fever. Mental depression or despondency, a sullen gloom of the countenance, and an almost insurmountable apathy and disinclination to mental and corporeal exertion, are remarkably characteristic of typhus, and never very conspicuously present in simple continued fever of the synochus grade. In common continued fever the patient generally has not much inaptitude of mind, often answers questions readily, and in a pretty firm voice, without much increased agitation of the breathing; whereas in typhus, the answers are mostly given with languid slowness and reluctance, and much speaking obviously disturbs respiration. In common continued fever the skin is usually of a brighter red than natural; whilst in genuine typhus it is always more or less of a *dusky, dingy* color. In typhus it has an early tendency to become brown and dry; in the common continued fever it is always white, and often somewhat moist for the first week. To these may be added the slight exanthematous efflorescence about the fourth day of the stage of excitement in typhus, which is never seen in common continued synochus; and the very peculiar smell which exhales from the bodies of typhus patients, and which occurs in no other malady.

When common continued fever of the synochus grade remains sim-

ple or uncomplicated with manifest local inflammation, it rarely assumes a low or a very dangerous character. Instances, however, do sometimes occur, which *apparently*, without any local inflammation, continue under no very violent train of symptoms until the vital powers gradually yield, and the system sinks into a state of great debility and nervous mobility. These cases are generally prolonged to the 5th, 6th, and even 8th week. The tendency of all febrile diseases, however, is to produce inflammation in some part or other of the system; and in few diseases, perhaps, is this tendency more strongly expressed than in the more violent cases of the present form of fever. Although it cannot be maintained that local inflammation invariably pre-exists as the only immediate cause of that group of phenomena we term *fever*, it must nevertheless be admitted, that, as an *effect*, more or less of local inflammation is much more commonly present in febrile diseases than was formerly, and by many is still supposed. In common continued fever from cold, encephalic inflammation is by no means a rare occurrence. In the more violent and rapid instances of the disease, where continued delirium, at first furious and then low and muttering, occurs, cerebral inflammation is, no doubt, always present. In nearly all those who die of this form of fever, the brain and its meninges exhibit marks of previous inflammation, such as effusion of serum into the ventricles and on the surface of the brain, great vascularity of its membranes, redness, vascular turgescence, flakes of effused lymph, &c.

Inflammation of the stomach and bowels also, is a common occurrence in the severer instances of this variety of fever. Tenderness of the abdomen to pressure—a constant disposition to lie on the back with the knees drawn up—a red and raw aspect of the edges and tip of the tongue; intestinal tympanitis, accompanied with low muttering delirium, are phenomena very frequently met with in the advanced stage of synochus fever—phenomena, which give unequivocal evidence of the presence of inflammation in the alimentary canal. In many cases, both the brain and mucous membrane of the intestinal tube are inflamed; and this concomitance of cerebral and intestinal inflammation renders the disease in the highest degree unmanageable and dangerous. Not unfrequently, however, the brain is the only organ which suffers inflammation. When the cerebral affection is unaccompanied by gastro-intestinal inflammation, the patient seldom sinks so rapidly into the typhoid state, as when the fever is attended by both these local effections. Great prostration and conspicuous typhus symptoms, in continued fever, are almost always associated with the above named signs of gastro-enteric inflammation.

The mucous membrane of the respiratory organs too, generally suffers irritation or some degree of inflammation. More or less cough occurs in the majority of cases; and in some instances the pectoral oppression and difficulty of respiration from this cause, becomes a prominent and serious affection.

*Prognosis.*—When symptoms of local inflammation do not supervene, the disease generally yields to a moderately rigid treatment, and terminates favorably under critical diaphoresis within the first two weeks. Early and violent symptoms of cerebral disorder are indicative of much



danger. Continued, low muttering delirium, picking at the bed-clothes, paralysis of one or both of the upper eye-lids, continued agitation and distortion of the muscles of the face, eyes turned up under the lids, &c., betoken cerebral inflammation, and the utmost degree of danger.

Great muscular prostration—constant position on the back—a small, extremely frequent and weak pulse, denote a state of collapse, from which recovery is extremely rare, especially when connected, as it almost invariably is, with manifestations of local inflammation. Tenderness in the abdomen—a gurgling noise when fluids are swallowed—tympanitis, liquid and unnatural alvine discharges in the early periods of the disease, are always indicative of great danger.

*Treatment.*—In the treatment of simple continued fever of whatever grade of febrile excitement, we shall vehemently contend for the utility of lobelia emetics. Beyond a doubt, there is a co-existing peculiarity in the influence or power of this article to equalize the circulation, independent of its emetic property. If the pathological enquiry is made in what resides this paramount singularity, the answer may safely be made in its *relaxing* power. If it is of the first importance to equalize the circulation and obviate any local determination; the impression of a lobelia emetic is most salutary, as the rapidity of the circulation is checked—the constriction of those infinitely small vessels, (the capillaries,) gives way—the pores are again opened, and permitted to carry along their usual burdens—the tension upon the surface is taken off—the cutaneous vessels are relieved and unloaded, and a *re-distribution* of the blood takes place, until a just balance is again restored. This is brought about by the controlling influence of lobelia upon the capillaries, partly by its relaxing agency—at the same time it tends by its revulsive, emetic power, to throw every thing again upon the surface. It is in this way, that those great *fites* in practice are sometimes performed by the Thomsonians upon chronic patients. Take a single example. Suppose a patient recovered from this same disease we are now contemplating, under the usual form of medication. Now, what medical gentleman of candor, will not allow, that the exhalents are frequently so deranged, so morbidly effected in their functions, that hydropic, or watery effusions, take place as secondary diseases! and it is by repeated courses of medicine, that these old habits and associations, (or rather new ones,) continued for a long time under peculiar modifications, are broken up. The perfect *revolutionizing* power of lobelia, in a great variety of diseases, cannot be appreciated, but by those who are acquainted with its operation. These assertions are not the offspring of a heated imagination, or an ardent enthusiasm—but the plain sober facts of every day's observation—and “familiar as household words,” with the Botanic fraternity. Were I to make an appeal for the truth of my language, the united voices of every Thomsonian in the land would give the same reply, until they made the very *echo's head ache!*

The influence of this emetic is very widely felt—cutaneous constriction is taken off—absorption, and particularly of the lungs, is promoted—excitement is subdued, and that equality of the circulation, upon which

a condition of health so much depends, is brought about and perpetuated.

However efficacious the first emetic may be in softening the severe indications, the use of lobelia is not to be immediately discontinued. Broken doses should be repeated to keep the stomach constantly nauseated; and a full emetic given in severe cases, every twelve or twenty-four hours.

Collateral support is also obtained by the liberal use of composition. If the skin is dry and hot, our attention should be directed to its relief by sponging frequently with tepid water, or saleratus water. The state of the pulse will reveal to us from time to time the true condition of our patient.

If our ambitious hopes seem to be a little checked in the outset, by the aggravated symptoms of our patient not being lessened, our patience and perseverance are not to be relinquished on *that* account. As in the old practice, we are directed to cord the arm, and *bleed, bleed, bleed*—at intervals of six and twelve hours, until the marked indications are subdued—so *in this*, the agency of this remedy, or this combination, is not to be discontinued, or abandoned as useless, because every symptom on its first exhibition does not yield to its power. Perseverance then, is the watch word. The bowels should be duly liberated from time to time by the use of the syringe, or some gentle aperient medicine. To allay a troublesome thirst, any of the common herb or mint teas, or toast-water, may be taken in any quantity. As soon as the febrile excitement of the system is repressed, tonic medicine should be freely given till the health is again restored.

If vascular action is very inordinate the combined operation of the bath and lobelia will most effectually diminish its violence, and lessen the momentum of the circulation. That the system may have the full advantage of this operation, the admonition must always be borne in mind, that it is to be employed in an early period of the malady.

There is always an impression made by a thorough operation of this character in the inception of the disease, which proves, beyond the possibility of cavil or doubt, its unequivocal superiority.

In the treatment of every form of fever, the prevention, or speedy removal of local inflammation, constitutes a chief object of remediate attention; and certainly there is no general remedy which answers this object more directly, than the prompt and judicious employment of the courses of medicine. Torpor of the cutaneous exhalents, is generally the first link in the chain of morbid actions which take place in the development of febrile diseases, and continues often throughout the greater part of their course, unless timely overcome by the employment of suitable diaphoretics.

In vain do we look for the subsidence of fever, so long as this important emunctory remains inactive. If we fail to procure an adequate discharge from the skin, great advantage will be derived by the secondary, sedentary effects of lobelia, given in small doses, independent, apparently, of its emetic property. For this purpose, five or seven grains of lobelia may be combined with one half of a teaspoonful of composition, and given every two hours. The effect will be to moderate febrile ex-

citement, diffuse a gentle diaphoresis over the system, excite a slight degree of nausea upon the stomach, and, perhaps, after repeated doses produce gentle vomiting.

As the bowels are almost invariably more or less constipated in the varieties of fever under consideration, and liable, therefore, to irritation from this source, they ought always to be evacuated by the aid of the syringe and gentle aperients.

Without doubt, the secretions which flow into the intestinal canal, in every variety of fever, become additional sources of irritation when suffered to accumulate; hence, with a view to remove these annoying causes, laxative medicine should be given. Drastic purging, on the other hand, must not be tolerated, as it would tend to create weakness in the bowels, and thereby local inflammation.

## TYPHUS FEVER.

THERE is, perhaps, no form of febrile disease, concerning which physicians have expressed a greater variety of conflicting opinions, than typhus fever. Long an object of the deepest interest and attention, it might well be presumed, that every circumstance calculated to illustrate its nature and immediate treatment, must have been abundantly noticed and accurately estimated. Whatever industry and carefulness of observation may have been bestowed on this subject, the result has not been very flattering, for even at this day, there exists great discrepancy of opinion, concerning many of the most important points of its pathology and treatment.

Without entering into a detail of the vague and arbitrary employment of the term typhus, in the writings of both ancient and modern physicians, it will be sufficient to state, in limine, that typhus is here regarded as a *peculiar* form of fever, capable of propagating itself by contagion—commencing often like synochus, and passing into a state, characterized by a stunned or torpid condition of the sensorial powers, with great prostration of strength, and delirium.

*Symptoms.*—(Premonitory stage.)—A peculiar uneasy sensation in the pit of the stomach, want of appetite, slight giddiness and nausea, pale, shrunk, and dejected countenance, dull and heavy eyes, often tremor of the hands, and a general feeling of weariness, debility, and disinclination to mental and corporeal action. These premonitory symptoms usually continue from three to six days, terminating in those which mark the stage of *invasion*, viz: slight chills, alternating with flushes of heat; an entire disgust for every kind of food; tongue covered with a thin whitish fur; considerable nausea, and sometimes vomiting; a quick, small, and irregular pulse; a confused and heavy sensation in the head, and increased mental and physical depression. This stage generally occupies from six to twelve hours, and terminates in the stage of *excitement*. The febrile heat now increases considerably, the face is slightly

flushed, the pulse rises in strength and fulness, the skin becomes dry, the lips parched, there is considerable thirst for cool drinks, the tongue becomes more furred and slimy, the bowels are usually torpid, the mind is more confused, the patient fretful, restless, and watchful, with an anxious expression of the countenance, the urine is small in quantity and reddish, the head feels heavy, much confused, and vertiginous; during the first two days of this stage occasional manifestations of slight delirium occur during the night. About the end of the second, or during the third day of this stage, slight catarrhal symptoms usually supervene—such as suffused and injected eyes, moderately inflamed fauces, somewhat painful deglutition, more or less oppression in the chest, attended generally with a short dry cough. There is often some tension and tenderness in the hypochondria, more especially the right one. Pains in the back, loins, and extremities, are rarely absent in this stage, and in most cases a general soreness is experienced throughout the whole body. Towards the close of the third day of the stage of excitement, there is usually much giddiness and sensorial obtuseness present; the patient appearing even at this early period of the disease, as if under the influence of some narcotic. The cerebral functions now become more and more disturbed, hearing becomes obtuse, delirium more frequent and considerable, and the general torpor gradually increases. Hildebrand asserts that a peculiar miliary exantheme occurs on the surface about the fourth day of this stage, which he considers as essential to the perfect and regular development of the disease. The same observation is made by Hartman. One of the most striking characteristic phenomena of typhus is the almost insurmountable aversion to corporeal and intellectual exertion, manifested throughout nearly the whole course of the disease. The patient moves slowly, and seemingly with great reluctance, and his answers to questions are hesitating, short and peevish. The stage of excitement generally continues about six or seven days, before it terminates in the stage of *collapse*, though this *sinking* stage, sometimes, supervenes at a much earlier period, and occasionally comes on a few days later. The occurrence of a collapse is manifested by the subsidence of the previous inflammatory symptoms, and the superposition of great prostration; feebleness and greater frequency of the pulse; a dry, brown, and eventually black tongue; teeth and prolabia incrustated with black scordes; a stunned, confused, and deranged state of the sensorial functions, with more or less constant, low muttering delirium; total apathy and indifference to surrounding objects; generally great difficulty of hearing; twitching of the muscles of the face, great difficulty of protruding the tongue, constant recumbence on the back, and gradual sliding down towards the foot of the bed from deficient muscular power; a peculiar biting heat of the skin called *calor mordax*, and finally, in violent cases, dark spots or blotches on the surface, a deep guttural or sepulchral voice, hiccough, and tympanitic state of the abdomen. Tenderness of the abdomen to pressure, is one of the most common symptoms, in the latter periods of typhus. During the collapse, the urine is rather copious, pale, and often foams like beer when voided into a vessel; there is, generally, also a manifest tendency to diarrhoea in the latter periods of this stage, the discharges being watery, acrid, and highly of-



sensive. Towards the termination of this stage, particularly when it tends to a fatal end, coma, more or less complete, is seldom absent, from which, however, the patient may usually be roused for a few moments. The period of collapse generally continues from seven to nine days, terminating either in slow convalescence or in death. The occurrence of convalescence is announced by the appearance of a gentle and uniform moisture on the skin, a reduction of the acrid heat of the surface, a moist tongue cleaning along the edges, more copious and sedimentous urine, abatement of the delirium, and short intervals of repose, and in some instances moderate diarrhoea. In some cases these phenomena of a favorable crisis do not take place until the seventeenth or even the twenty-first day, but in the majority of the instances they occur about the thirteenth or fourteenth day of the disease. The progress of convalescence is generally tedious, and the debility both of body and mind, after the total subsidence of the fever is always very considerable.

Such are the course and principal phenomena of simple typhus, in its regular progress. Deviations and various irregularities do, indeed, frequently occur, even in the simple form of the disease, but, they are seldom such as to efface the peculiar character, or essential phenomena of the malady.

Typhus, however, is subject to certain prominent modifications, which, as they require corresponding changes in the mode of treatment, require particular notice. In some instances, the disease is early attended with internal visceral inflammation, a complication which adds considerably to the rapidity and danger of the malady. This modification constitutes the inflammatory typhus of Armstrong. The typhoid pneumonia, so extensively and fatally prevalent throughout this country, in the years 1811, 1812, and 1813, was of this kind.

The brain, the lungs, the mucous membrane of the alimentary canal, the liver, and the peritoneum, are the parts most apt to become inflamed in typhus; and of these parts, the brain and intestinal tube are most frequently the seat of the inflammation. Most commonly, the phlegmasial symptoms do not supervene, until the second or third day of the stage of excitement, though occasionally, the local affection manifests itself much earlier.

When the brain is inflamed there is generally deep and pulsating pain in the head; flushed countenance; throbbing of the carotids, redness and morbid sensibility of the eyes; irritability of temper; transient pains in the extremities; great precordial oppression; irregular respiration; continued watchfulness; visual illusions; early and almost unintermitting delirium; a dry and blood-hot appearance of the eyes; contracted pupils; intolerance of light; gloomy and agitated countenance; continued moaning and coma.

When the lungs are inflamed, the ordinary symptoms of pneumonia are superadded to those of typhus. Pain and cramps in the inferior extremities; or, pain along the course of the spine, with irregular and difficult respiration, (unconnected with pneumonic symptoms,) and a peculiar uneasy feeling, in the pit of the stomach indicate the existence of spinal inflammation. The signs of enteric inflammation are often

much more obscure. Tenderness and tension of the abdomen; an anxious and disturbed countenance; a very small, quick, and frequent pulse; constant recumbence on the back; much retching or vomiting; longing for cool drink; a burning sensation in the pharynx; difficult deglutition and great prostration of strength characterize this variety. The patient, however, seldom complains of pain in the abdomen, unless pretty firm pressure is made on its external surface, when his sufferings are, generally, strongly expressed, both by complaints and by the expression of his countenance.

There is another modification of typhus, the *congestive*, which is characterized by the following phenomena: a want of febrile reaction, after the stage of oppression, the system remaining in an oppressed condition, throughout the whole or the greater portion of the course of the disease. The vital powers are overwhelmed and depressed, and the patient appears to sink, progressively, from the moment the disease commences until the vital action ceases altogether. In the more aggravated cases of this kind, there is, from the beginning, extreme lassitude and debility, attended with deep-seated pain in the head, with a feeling of weight and vertigo; the face remains pale; respiration is much oppressed and slow; the pulse is struggling, small, feeble, slow, and variable; the skin relaxed, damp, and usually below the natural temperature; the countenance confused, vacant, and anxious, the patient appearing as if stunned by a blow. The eyes are generally dull, watery, vacant, and often red; the bowels at first torpid; but in the advanced period of the disease often affected with watery diarrhœa. In the commencement, the tongue is pale, slimy, becoming rough and brown afterwards. Towards the close, petechiæ, colliquative hæmorrhages, and involuntary stools, are apt to occur. Sometimes coma is among the first symptoms, and continues to the end of the disease; and not unfrequently a complete state of insensibility and torpor supervenes soon after the disease makes its attack.

*Cause.*—In relation to the cause of typhus, much difference of opinion exists among physicians. Whilst some maintain that it may be produced by any of the ordinary causes of fever, others believe that it is essentially a specific disease, and dependent, exclusively, on a peculiar virus or morbid agent. Dr. Armstrong has advanced the opinion, that typhus is often generated by the same miasm that produces remittents and intermittents; an opinion, however, which does not appear to have obtained many advocates. It is, indeed, not to be denied, that when marsh miasmata, or, perhaps, any of the usual causes of fever, act on a system which has been depressed and debilitated by the enervating influence of cold, want of nourishment, mental distress, &c., a low or *typhoid* state of fever will be developed; but the course and characteristic phenomena of such fevers, do not accord with those which mark genuine contagious typhus. If koino-miasmata (malaria) were capable of producing typhus, we should find this disease (one might reasonably expect) among the prevailing forms of fever in all miasmatic districts, which, however, is contrary to general observation. During the years 1822, '23, '24, '25, and '26, miasmatic fevers were extremely common throughout nearly every section of this country; and yet, typhus was but very rarely ob-

served. There are, on the other hand, localities where typhus has very frequently prevailed with great severity, but where intermittents and remittents are almost unknown. Dr. Smith states, that on the Connecticut river, from Northampton in Massachusetts to its source, a distance of more than two hundred miles north and south, and on all its tributary streams, on both sides, for a hundred miles in width, there has been no instance of any person having contracted the intermitting fever, from the first settlement of the country to the present time; and yet typhus fever has prevailed more or less in every township within that tract of country. In confirmation of his opinion on this head, Dr. Armstrong affirms that remittents often assume the appearance and character of typhus; and that these two forms of fever resemble each other in many of their most striking symptoms. Remitting fever, he observes, is always attended with a simultaneous affection of the brain, the mucous membrane of the respiratory passages, the mucous membrane of the alimentary canal and of the liver—a combination of symptoms always present in typhus. If, however, resemblances of this kind are to be admitted as evidence of identity of cause, we might, with equal propriety refer small-pox, catarrhal fever—nay, almost every form of disease, to one and the same cause. The characteristics of typhus do not consist in any of these circumstances. With regard to the alledged conversion of remittents into typhus, it may be observed, that the former do, indeed, in some instances, assume a low or typhoid character; but this may be predicated of nearly every other variety of febrile disease, and cannot be justly urged as an argument in favor of the common origin of the two former diseases. I have myself known ten cases of ordinary bilious remittents, brought together in an ill ventilated and narrow apartment, degenerate into low and putrid fevers of a highly fatal character. A system already suffering from a miasmatic disease, may, no doubt, be brought under the influence of those morbid effluvia (*idio-miasmata*), which are generated by a number of persons crowded into narrow, close, and sordid apartments. It can scarcely be doubted, that when these two varieties of miasmata act concomitantly on the system, the product will be a form of fever, neither distinctly typhus, nor yet, remittent or bilious in its character.

Whatever may be the discrepancy of opinion among physicians, in relation to the existence of a typhus contagion, all seem to be agreed upon one point—namely, that typhus is often generated by that species of miasmata which is involved in very crowded, confined, and filthy apartments, by the decomposition of human effluvia. The records of medicine abound in examples of the production of typhus by the morbid effluvia generated in crowded and ill-ventilated ships, jails, hospitals, and the confined and sordid hovels of the poor. Although often unequivocally generated in this way, it is scarcely less certain that when once developed, typhus elaborates a peculiar virus or contagion, by which it may afterwards be communicated to those who come within the sphere of its activity. It should be observed, indeed, that there is much weighty authority extant, against the existence of a typhus contagion. As positive observations cannot, however, be adequately counterbalanced by negative facts and speculative objections, we are constrain-

ed to give credence to the reality of such a contagion, by the vast body of direct testimony we have of the repeated propagation of this disease in a manner demonstrative of such an agency. Wedekind states that, during the campaigns of the French against Russia, the typhus contagion, which was generated in the hospitals and houses crowded with prisoners and sick, was communicated to the inhabitants along the road, by which the soldiers returned; and afterwards spread gradually from the road-side to the adjacent districts, until the disease became widely prevalent. The route of the returning army, from Poland through Germany, could be distinctly traced, by the desolating train of disease it left behind.

Somewhat analogous to the narcotic poisons, the miasm or contagion of typhus possesses a specific tendency to benumb or diminish the sensorial powers, and to depress, generally, all the vital energies. In a state of vigorous health, with the powers of vital resistance unimpaired, the deleterious operation of the typhus contagion is much retarded, and often entirely prevented. In an opposite state of the system, however, when the moral and physical energies are depressed, by that combination of hardships and privations, which attend succorless and hopeless poverty, in times of general distress, this morbid agent seldom fails, when once engendered, to manifest its deleterious powers.

The typhus contagion, like that of small-pox, is capable of attaching itself to various substances, more especially to articles of clothing, and thus to retain its power of infecting for a long time. It is asserted, however, that *clean* articles of clothing are never rendered infectious by the deposition of this contagion; an assertion which admits, I think, of some doubt. It is, indeed, sufficiently ascertained that filth of every kind greatly favors not only the development, but the activity and preservation of this poison; but we have no satisfactory grounds for denying that it may not attach itself to clothes not dirty, particularly woollens, and retain its powers of infecting for a considerable period.

What length of time the typhus contagion may retain its powers of infecting, when deposited in fomites, cannot, perhaps, be definitely ascertained. Hildebrand thinks it seldom retains its activity more than about three months; but this, no doubt, depends greatly on various accidental circumstances—such as degrees of confinement, or ventilation, cleanliness, and the nature of the substance to which it becomes attached. Dr. Rush states, that he has known typhus produced by the contagion which was left in a room six months after it had been occupied by patients ill with this disease.

In a pure and free air, the typhus miasm extends but a short distance—perhaps not more than three or four feet from its source, in a sufficient degree of concentration to infect a healthy individual. It would appear that pure air is capable of dissolving or decomposing the particles of this contagion; and thus to destroy their power of infecting; or, perhaps, as some maintain, the effects of free ventilation in this respect may depend chiefly, if not wholly, on the rapid dilution of the miasm in the air, and its consequent insufficient concentration to affect the system. Be this as it may, it has been well ascertained, that there is but very little danger of becoming affected, in the chamber of a



typhus patient, provided the air be freely admitted and cleanliness observed. In an impure and confined atmosphere, however, the miasm, in question, gradually diffuses itself throughout its whole extent, and retains a high degree of activity; and hence, those who visit typhus patients in narrow, dirty, and close apartments, are particularly liable to become infected.

Whatever be the virulency or activity of the typhus miasm, experience has ascertained, that its power of affecting the human system is greatly under the control of constitutional, as well as of accidental *predisposition* to its deleterious influence. It would appear, even, that the condition of the organization which constitutes this predisposition is peculiar (analogous to that which constitutes the susceptibility to small-pox or measles, &c.,) and independent of the incidents of mere grade of constitutional vigor or health. It is asserted by Hildebrand, Hartman, and some other writers, that this susceptibility to typhus is greatly diminished, by an attack of the disease; so that, the liability to a second attack is, for a considerable time at least, much lessened, if not entirely removed. Independent of this constitutional or natural predisposition, there are various circumstances of an accidental character, which contribute materially to enhance the deleterious influence of this miasm. I have already adverted to the tendency which impure air, want of wholesome nourishment, excessive muscular action, despondency, and personal filth, have in favoring the operation of the typhus contagion. It would appear, moreover, that the predisposition to infection, from this cause, varies with the age of the individual; for the occurrence of this disease in infancy and very advanced age, is extremely uncommon. It is remarkable, says Hildebrand, that very young children, who otherwise are so very susceptible of contagious diseases, are extremely seldom affected with typhus; and it is almost as uncommon to meet with this disease, in very aged and withered individuals. No difference, in this respect, obtains in relation to sex; but it would seem that individuals of a delicate and relaxed habit of body are more susceptible of the typhus infection, than such as are robust, muscular, and well nourished.

It may be observed, however, that although inflammation of the mucous membrane of the alimentary canal is a very common affection in this malady, and in cases of a fatal tendency, perhaps very rarely absent, it is still exceedingly improbable that it constitutes the primary and essential pathological condition of the disease, and cannot, therefore, be regarded as its proximate cause. Such inflammations occur, most probably, in the course of the disease, and should be viewed as one among the ordinary morbid consequences of the fever. The importance of attending to this condition of the intestinal canal, in a practical point of view, is by no means lessened by the supposition of its being consecutive; for, whether primary or secondary, its reduction or removal must constitute a very essential part of the remediate treatment.

*Prognosis.*—To the experienced physician, the general course and degree of violence of the disease, in connection with the degree and situation of the internal local inflammation, will usually afford sufficient data for the formation of a probable prognosis. Observation, however,

has made us acquainted with various particular phenomena, as being indicative, either of a favorable or fatal termination of the disease, and which it is of importance to bear in mind, in forming a prognosis.

Among the symptoms which appear to indicate a favorable tendency of the disease, are, spontaneous vomiting during the first and second days of the disease, more especially when the unpleasant cephalic sensations are thereby abated; slight hæmorrhage from the nose, about the sixth or seventh day of the stage of excitement, is a good indication; and moderate diarrhœa, at an earlier period, is likewise favorable. Pringle asserts, that he has often known the disease subdued by the early occurrence of gentle diarrhœa; when the abdomen remains soft, and free from pain and tenderness to external pressure, it is a favorable sign. Moderate and quenchable thirst during the stage of collapse, is said to be much more favorable, than when the patient expresses no desire to drink. A moist tongue during the collapse is a good sign; and so is a moderately free and not very frequent pulse. The most certain sign, however, of a favorable termination, is derived from the state of the sensorial functions. If these are but slightly disturbed during the collapse, the issue will most probably be favorable. Most writers mention deafness as a good sign; Hildebrand, however, has not found this observation confirmed by his experience.

The unfavorable signs, are, a change in the expression of the countenance at an early period of the disease; total want of thirst; violent delirium during the stage of excitement; peripneunonic symptoms. But the most ill-boding of all the bad symptoms are, blindness; involuntary flow of tears; difficult deglutition; paralysis of the tongue; continued low muttering delirium; a very frequent, small, and irregular pulse; petechia; distortion of the muscles of the face; pain, or great tenderness of the abdomen; continued motion of the hands, and picking at flocks; dysenteric stools; insensibility to active pain; aphtha in the mouth; involuntary colliquative stools; colliquative hæmorrhages, &c. After all, however, patients do sometimes recover from this disease after many of the most alarming of these symptoms have made their appearance.

*Treatment.*—Without doubt, the most important treatment in the early period of the disease, with a view of moderating its violence or arresting its progress, is regular courses of medicine. If this plan does not subdue it entirely in the forming stages, it greatly modifies its severity in its subsequent career. Comparative estimates of this medication, but strengthens the conclusion of its safety and propriety. Lobelia emetics should be given every ten or twelve hours during its inception. A tendency to visceral inflammation, which is frequently a prominent feature of typhus, is greatly diminished by the adoption of this rule as the arterial action is lessened, and the pressure upon the cutaneous exhalents taken off. A movement of the bowels should also be procured daily by the aid of the syringe, or some laxative medicine—this should not be forgotten. Dark colored, offensive matter, should not be suffered to accumulate, as it most certainly will, and to the detriment of the patient, if this admonition is unheeded. Although spontaneous diarrhœa is considered an aggravated indication in this disease, and particularly

in its advanced stages, yet, it should not be suddenly arrested, and the bowels suffered to remain quiet for several days afterwards. Diaphoretics should be employed as auxiliaries to the more efficient treatment already pointed out. Half a tea-spoonful of composition and five or seven grains of the seeds of lobelia impulverized, may be given, combined, every two hours, in a little cold water. If too much nausea and vomiting should be excited by this, the portion may be lessened, or given at greater intervals. During the exacerbations of the fever, if the surface is very dry and hot, notwithstanding the sudorific treatment, moderately cold ablutions may be advantageous; or if the heat is unequally distributed, partial effusions to the head, hands, or feet, may have a favorable effect; although when there is much pain and tenderness of the abdomen, and we have every reason to apprehend the existence of inflammation of the bowels, some objections may be formed against the too free use of cold water applied externally. Under such circumstances, warm water, or warm sakeratus water would be preferable.

Another article possesses great merit as a sudorific, not only in this, but we would say, in all forms of fever, as it produces a powerful action upon the vascular, capillary, system, and thereby promotes perspiration without exciting or accelerating arterial motion. It is much to be regretted that it is not more generally known and adopted by the Botanic fraternity—it is *crawley*. This article combined with white root, and lobelia, in the proportion of half a tea-spoonful each, of the two former, to five grains, or as much as would lay on the point of a pen-knife, of the seeds of the latter, forms almost an unparalleled febrifuge. It should be given consecutively every two hours.

If the patient complains of a sense of chilliness of the extremities during the intermediate stages or collapse, hot bricks or bottles of hot water should be applied to them, and an attempt made to restore the lost balance of warmth of the system.

If at any time the brain becomes oppressed, and delirium supervene or a kind of torpidity, or stupor of the intellectual functions, and the pulse slow and feeble as a co-existing aggravation, the eyes fixed and red, and great prostration of the general system; recourse must be had to stimulants. No. 6, repeated to suit the age and condition of the patient, will be a very proper means of affording advantage. But should there be sensorial disturbance accompanied by an increased pulse and other febrile excitements, the employment of stimulation is contra indicated.

In whatever grade of typhus, whether simple or inflammatory, there always exists a tendency to cerebral derangement and prostration. The pulse may at first be full and active, yet, the influence of the remote cause from the beginning is to debilitate the vital functions. This peculiarity in the general character of the complaint, is not to be incautiously forgotten, and the proper stimulants, at the proper time and place, in its progression, neglected. The tide of circulation therefore, must be carefully watched; and if any tendency towards congestion is manifest, the most prompt and judicious treatment must be applied. As internal congestions appear to be the consequence more frequently of the depletive practice, this change in the essential character of the

malady is much less liable to occur under the foregoing treatment, than in the hands of the regulars. Congestion is doubtless dependent on the loss of energy in the vital powers, and especially of the extreme vessels upon the surface ; therefore, whenever it makes its appearance, it would seem the most prudent and efficient course, and the best calculated to obviate the difficulty, to recall, if possible, the blood back to the surface.

The vapor bath, if it can be introduced into the bed, fomentations, frictions with a rough cloth, saturated in a tincture or infusion of cayenne pepper ; hot bricks, or bottles of hot water applied to the feet, legs and sides ; flannels wrung out in No. 6, and applied over the suspected region, are the means which appear to us best calculated to accomplish the desired purpose. It must be recollected that, typhus is a disease of debility ; that the powers of life are weakened from its inception, and that, *that* mode of treatment, consequently, is preferable which best answers the purpose in view, with the least expenditure of the resources of the system. It will scarcely be necessary to offer a remark with regard to diet in typhus, as we lay down general rules applicable, with but few exceptions, to all forms of disease. The patient may be allowed such mild, unirritating nourishment, as instinctive nature in her movements of oppression and debility, would seem to select.

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## OF INFLAMMATION IN GENERAL.

PRELIMINARY to considering the general affections which properly belong to this head, it will be necessary to treat of the phenomena, nature, and progress of *inflammation*. The scope of this work does not admit of a full discussion of this interesting subject, but it is believed that the following summary will be found to embrace all that is really important or well established in relation to this form of vascular disease.

Although *inflammation* is characterized by *pain*, *increased heat*, *redness*, and *swelling*, yet none of these phenomena are to be regarded as strictly essential to its existence. Each of these phenomena too, is greatly diversified in its character, according to the nature of the structure in which the inflammation is located. Thus *pain*, though generally present, is not always so, and it would seem that the looser the structure, the less violent in general will be the sensation of pain. Inflammation of the lungs, of the mucous membrane of the stomach and bowels, of the brain, and of the pericardium has been found from the commencement, to its termination in death entirely unattended with pain. Even the character of the pain is modified by the nature of the inflamed structure. In the mucous membranes it is burning or stinging ; in the pleura it is lancinating and generally extremely acute ; in the ligaments, or fibrous structures, it is dull, aching, and gnawing ; and in the nerves rapid, darting, and excruciatingly severe. But although the pain may be sometimes very trifling, or even absent in inflammation, a feeling of soreness or aggravation on pressure always occurs. In this, inflammatory pain differs essentially from the pain which attends spasm.



The violence of the sympathetic febrile reaction is in general proportionate to the intensity of the pain experienced in an inflamed part. Thus, in acute inflammation of the tubes from the lungs to the wind-pipe, there is neither very severe pain nor very vigorous reaction of the heart and arteries; whereas, in inflammation of the pleura, both the pain and the febrile reaction are almost always extremely great.

*Increased heat* is another general phenomenon of inflammation which is sometimes absent. The sensation of heat in an inflamed part does not appear to depend on any actual accumulation or elevation of temperature measurable by the thermometer, but on the altered state of the sensibility of the nerves implicated in the inflammation; for the sensible heat of an inflamed part rarely indicates more than 98° of Fahrenheit's thermometer.

The most invariable phenomenon of inflammation is *redness*. It arises from the passage of red blood into the serous capillaries, which either from debility, and consequent relaxation, or from an altered state of their specific sensibility, offer no resistance to the intromission of the red globules of the blood. This redness generally remains after death, and affords one of the ordinary post mortem evidences of inflammation. Redness by itself, however cannot be regarded as a certain sign of previous inflammation, for the serous capillaries may become injected with red blood at the time of death although wholly free from previous disorder. I have already adverted to this fact, and to the erroneous inferences it may lead to, in the preliminary observations on the pathology of fever.

*Swelling* is always more or less present in the soft structures, and appears to depend on effusion of serum into the surrounding cellular tissue, and on the dilatation of the capillary vessels. The firmer the structure is, the less swelling will occur from inflammation.

Inflammation is an affection of the capillary system of vessels, and appears to consist of an altered condition of their vital properties, with inordinate sanguineous congestion, and hence the more abundant the capillaries of a part are, the more apt it is to become inflamed. The mucous, serous, cellular, and dermoid structures being peculiarly vascular, are much more frequently affected with inflammation than the osseous, cartilaginous, and tendinous structures.

Inflammation may be produced, 1. By the *direct* operation of irritating causes on the animal structure: as wounds, bruises, burns, mustard, cantharides, turpentine, the acids, or various caustic substances. 2. By the *indirect* operation of irritants through the medium of the nervous system. Thus, acid in the stomach will sometimes give rise to superficial cuticular inflammation; and meningeal inflammation is frequently the consequence of irritants acting on the mucous membrane of the intestinal canal. 3. By general increased action of the heart and arteries, as frequently occurs in synochal fever, where any portion of the capillary system is accidentally debilitated, and thereby predisposed to inflammation. It is in this way that most of the inflammations which occur in fevers arise, for when the momentum of the general circulation is augmented by the increased action of the heart and arteries, the blood will, by its impetus, be forced into these capillaries which, from debility,

either accidental or induced by the remote febrific cause, offer less resistance to its intromission than they do in a state of natural vigor. 4. By metastasis; thus, erysipelas sometimes passes in and fixes upon an internal organ; and gout occasionally passes from the feet to the stomach, brain, and to various other parts.

Whatever may be the remote exciting cause of inflammation, it is probable, that the following changes are effected in the progress of its evolution. 1. *Irritation*, that is, a certain inordinate or hurtful impresion on the nervous filaments of the part, by which a new and irregular excitement is produced in them, called irritation. 2. *Alteration of the vital properties* of the capillaries of the part thus irritated or disturbed by the unnatural impresion; and 3. An afflux, or determination of the blood to these capillaries. These changes often succeed each other so rapidly, that they seem to occur simultaneously. A change in the sensibility and irritability of the capillaries, would seem to be essential to the existence of inflammation; for where these vital properties remain in their normal state, preternatural determination of the blood into them does not constitute inflammation, but only *congestion*, or local plethora.

Are the capillaries of an inflamed part in a state of *debility* and *passive relaxation*, and is the velocity of the blood circulating in them diminished, as is contended by Vacca, Lubbeck, Allan, Phillip, and Hastings; or, are these vessels in a state of *increased action*, and the momentum of the blood within them augmented, as is maintained by Hunter? Upon these points, there has been a great deal written, both *pro* and *con*, and the subject is still not well settled. My own view on this subject is, that the inflamed capillaries ought to be regarded as being in a state of irritation, and that this irritation may be connected either with an *increased* or *decreased* power of action. In this respect, local inflammation corresponds with that general irritated vascular excitement, which constitutes fever. The heart and arteries are in a state of irritation, with *increased power of acting* in synocha.

*Terminations of Inflammation.*—Inflammation is said to terminate in *resolution*, when it declines, and disappears without having induced any structural lesion, or perceptible discharge. It consists in a gradual return of the vital properties of the inflamed part to their natural condition, and a consequent resumption by the capillaries of their ordinary or healthy action, before either some portion of the affected parts is destroyed from total loss of vitality, or *new* secretions are formed by the morbid action of these vessels. Termination by resolution is always more prompt in proportion as the inflamed part is endowed with a higher degree of vitality. Frequently the termination of inflammation by resolution, is accompanied by an increase of the natural secretions of the affected organ; and this is particularly noticed in the mucous membranes, as in catarrh and coryza, where an increased secretion of mucus always announces the favorable termination of the inflammation. The same fact is also conspicuously exemplified in rheumatic inflammation, which rarely terminates without an increased exhalation of serum into the surrounding cellular structure. *Effusion* is another of the terminations of inflammation. The fluid effused may be either blood, or lymph,

or serum. The termination by effusion of *blood*, occurs most commonly from the softer and more vascular structures, more especially from the surface of *mucous membranes*. Lymph and serum are rarely effused from this structure, these effusions being almost peculiar to the *serous membranes*. The *lymph* which is thus effused in the declension of inflammation from serous membranes, often forms a bond of union, and causes firm adhesion between them when contiguous to each other. It is thus that the costal and pulmonic portions of the pleura are so frequently found united, in consequence of thoracic inflammation. In the *mucous* membrane, such adhesions never occur from inflammation; and this is one of those wonderful adaptations in the animal economy, in which the benevolent design of an allwise Providence is especially conspicuous; for without this peculiarity in the mucous structures, we should be continually liable to adhesions between the surfaces of the various excretory ducts, as well as of those of the alimentary canal and respiratory passages, since these are more frequently affected with inflammation than any other parts of the animal system. When lymph is effused into the substance of the solid viscera, or into the cavities of the cellular tissue, it causes a consolidation of these parts, forming what are technically called indurations. The spleen, liver, and lymphatic glands, are particularly liable to these consequences from inflammation.

*Suppuration*, also, is one of the modes in which inflammation is wont to terminate. Of all the animal tissues, the *mucous* and *cellular* are most liable to this mode of termination. The bones and tendons never enter into the suppurative action from inflammation; and the *serous* membranes, though liable to suppuration from inflammation, are much more apt to pour out an increased flow of serous fluid. The product of the suppurative process differs conspicuously in the different structures that are liable to it. In the mucous membranes, the fluid elaborated by this morbid action, consists of a whitish, cream-like, or greenish appearance, denominated pus. In the *serous* membranes, the pus is formed by a kind of exhalation, and consists of a thin, *whewy-like* fluid, generally intermixed with flakes of coagulated lymph. Suppuration of the cellular tissue produces a thick pus, of a pale-yellow color and uniform consistence, exhibiting, under the microscope, the appearance of minute globules suspended in a serous fluid. The grade of inflammation which results in suppuration, transcends that which is necessary for the secretion of lymph; and hence, around the circumference of inflamed parts, involving cellular tissue, where the inflammation is less active than at the central portions, lymph, and not pus, is formed; in consequence of which, the cells adhere to each other around the internal suppurating space, and form a circumscribed cyst or cavity in which the pus is retained, constituting an *abscess*. The occurrence of suppuration in an internal organ, is generally manifested by a sensation of weight in the region of the affected part; a change from an acute to a heavy, dull, and throbbing pain; rigors; a change from a hard, tense, and quick pulse, to a soft and moderately full one; night sweats, and other symptoms of hectic.

Inflammation may also terminate in *gangrene*. This mode of termin-

ation never occurs in the cartilages, nerves, and bones; the mucous, cellular, and serous tissues, being most prone to it. Of the serous tissues, the *peritoneum* appears to be most apt to become gangrenous from inflammation; and of the mucous membranes, that which lines the alimentary canal is most subject to this termination. The occurrence of gangrene is attended with a sudden cessation of pain; sinking of the pulse; cold extremities; cold sweat; indistinctness of vision; slight delirium; and a cadaverous expression of the countenance.

The four modes in which inflammation terminates, appear to be determined by four corresponding grades of inflammation. This is strikingly illustrated in the phenomena of common phlegmon or boil. Along the circumference where the inflammation is weakest, there is serum effused into the surrounding cellular structure; a little further towards the centre, where the inflammation is somewhat greater, lymph is thrown out, and adhesion formed; within this circle, where the inflammation is still more violent, pus is secreted; and at the central portions gangrene and sloughing occur.

The different forms of inflammation manifest different tendencies in relation to these terminations. In boil and whitlow, there is an especial tendency to suppuration; in carbuncle, the disposition is to terminate in gangrene; and in rheumatism and mumps, the tendency is strongly to resolution. Indeed, so strong are these original dispositions to terminate in one mode rather than in another, that it is very difficult to procure any other termination than the one to which the tendency exists.

Inflammation occurs under five prominent modifications, corresponding to the five elementary tissues, viz: the cellular, the serous, the mucous, the dermoid, and the fibrous.

1. Inflammation of the cellular tissue or phlegmonous inflammation is characterized by great swelling, throbbing pain, and by its peculiar mode of suppurating—the pus being collected in circumscribed cavities.

2. Inflammation of the serous structures, or serous inflammation, is distinguished by very acute *lancinating* pain; little or no tumefaction; much sympathetic reaction of the sanguiferous system; by its tendency to terminate in the exudation of coagulable lymph or serum, or the secretion of a thin, whey-like pus. It is peculiarly rapid in its course, and is not apt to terminate in gangrene. Adhesions are peculiar to this and the former modification of inflammation.

3. Inflammation of the mucous tissues or mucous inflammation, is attended with a burning or stinging pain; without tumefaction of the subjacent cellular structure; the sympathetic fever attending it is not vehement; and it never terminates in resolution, without an increase of the mucous secretion.

4. Inflammation of the dermoid system, or erysipelatous inflammation, is attended with a burning pain; it spreads irregularly over the surface of the skin, forming vesicles or blisters, containing a transparent straw-colored serum, and never forms adhesions, or suppurates in circumscribed cavities. This variety of inflammation generally depends on constitutional causes, and it would seem, in some instances, on a specific cause.

5. Inflammation of the fibrous structures, or rheumatic inflammation,



is accompanied with intense aching or gnawing pain; and is particularly indisposed to terminate in suppuration or gangrene—it's almost universal termination being in the exudation of serum and a gelatinous fluid, or in the deposition of earthy matter. It is apt to derive its irritation from one place to another, and sometimes pass on suddenly to the internal organs. The sympathetic fever which accompanies its acute form is always very vigorous. This modification of inflammation rarely proves fatal, unless by metastasis to organs essential to life.

The existence of internal inflammation is ascertained by the pain continuing without much remission; the appearances of the blood, which, when drawn, very generally exhibits a sizzly or buffy crust on the crassamentum; by the presence of fever, which does not attend spasmodic or nervous pain, by the effects of *external pressure*, more especially in abdominal inflammation—thus causing an aggravation of the pain, or a feeling of great soreness—whilst in spasmodic pain, a mitigation of the patient's sufferings is usually the consequence of pressure. The effects of position also throw light on the diagnosis internal inflammation; thus, in abdominal inflammation, the patient lies on his back, with the knees drawn up, and the head and shoulders raised, in order to obviate pressure from the tension of the abdominal muscles. The character of the functional derangements moreover, will assist us in ascertaining the existence of internal visceral inflammation; and, finally, the nature of the exciting causes will aid us in the diagnosis.

Inflammation occurs under two principal varieties, in relation to the rapidity of its progress and the violence of its phenomena—namely, *acute* and *chronic* inflammation. The former is rapid in its course, and violent both in its local and symptomatic phenomena. The latter is generally, though not always, the consequence of the former, and is characterized by a slow progress, and much less intensity in all its symptoms. In the serous membranes, chronic inflammation results either in the effusion of serum, giving rise to dropsical accumulations, or to a gradual change of structure, such as thickening and induration, and frequently to the formation of milary tuberculous matter. In the mucous tissues, the usual consequences of this variety of inflammation are consumption, diarrhoea, dyspepsia, and various other local and general affections; and in the solid viscera and glandular structures, induration, scirrhous, and other organic changes are its effects.

To the pathologist and medical practitioner, the sympathetic phenomena of inflammation constitute one of the most interesting and important objects of attention. Among the multifarious febrile affections that are met with in practice, whether acute or chronic, there are comparatively but very few in which local inflammation does not exist in some organ or structure; and, although in the majority of instances, these inflammations are secondary, or developed after the commencement of the fever, their influence in protracting the disease, and aggravating its phenomena, is perhaps, not the less conspicuous. Whenever febrile irritation becomes much protracted or chronic in its course, we may infer, with little chance of mistake, that there exists some obscure focus of inflammation in an internal part. Pure idiopathic or general fever, without the accessory irritation of local inflammation, can never

continue very long. Mere morbid excitement, from general causes or moveable irritants, is generally soon overcome by the organic, or what has been called the sanative actions of the animal economy.

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## PHRENITIS, OR INFLAMMATION OF THE BRAIN AND ITS MEMBRANES.

PHRENITIS is an inflammation of the parts contained in the cavity of the cranium, and may affect either the membranes of the brain, or the brain itself. It is called primary, or idiopathic, when it exists independent of any other disorder; and symptomatic when it arises in consequence of some other disease, as fevers and inflammatory affections; which species is that most universally met with, the other occurring but very seldom. In warm climates, it appears to be sometimes produced by exposure to intense rays of the sun, and often proves quickly fatal.

Its characteristics are vehement arterial excitement, severe pain in the head, redness of the face and eyes, intolerance of light and sound, watchfulness, and violent delirium.

The causes which give rise to idiopathic phrenzy, are such as directly stimulate the membranes or substance of the brain, or increase the impetus of the blood in its vessels: hence violent fits of passion, intense study, excessive venery, severe exercise, external violence of any kind, such as blows on the head, concussion, fissure, or fracture, an immoderate use of vinous and spirituous liquors, a long continued exposure to the heat of the sun, and the suppression of accustomed evacuations, as hæmorrhoids, menses, issues, milk drying up, &c., may be regarded as the remote causes. Many acute diseases, and a long want of sleep, may give rise to symptomatic phrenzy.

The idiopathic is usually preceded by long-continued and almost constant watching, or frightful dreams, acute pains at first in the neck and occiput, afterwards extending to the head, deep respiration, inability to recollect circumstances which have lately happened, suppression of urine, and irregular pulse. As the disease advances, the eyes sparkle, and are violently agitated; there is a ferocity in the countenance, with universal restlessness, deafness, great confusion of ideas, violent ravings, intolerance of light, evident pulsation in the temporal and carotid arteries, and the most furious delirium. The tongue is dry, rough, and of a yellow or black color; the face is of a deep red; and the pulse is small, quick, and hard.

The symptomatic phrenzy is constantly preceded by acute fever, or some inflammatory complaint, and is usually accompanied with inability to sleep, constant watching, delirium, picking at the bed-clothes, redness and fierceness of the eyes, wild look, and deep breathing.

Phrenitis is distinguished from mania by the quickness of the pulse, and the attendant fever and pain in the head; and from that species of

delirium which occurs in low fevers unaccompanied with inflammation, by the appearance of the countenance and eyes; for in true phrenzy the face is red, the features are rather enlarged than shrunk, and the eyes protuberant and sparkle: where as in the delirium supervening to low fever, the face is pallid, the features are shrunk, and the eyes pearly. It is to be distinguished from synocha by the state of the pulse; as in the latter it is strong and full, whereas in the former it is small, hard, and more rapid. In phrenitis, the delirium is the primary affection; but in synocha, it is consequent upon the general fever.

Phrenitis, whether idiopathic or symptomatic, may always be regarded as a dangerous and alarming complaint: it often proves fatal between the third and seventh day; and, if long protracted, is apt to terminate in mania, or great prostration of strength: it often terminates in stupor and insensibility. In children, an effusion of water between the membranes of the brain, or in the cavities of its ventricle, is a frequent consequence. Grinding of the teeth, white or ash-colored fæces, suppression of urine, startings of the tendons, with convulsions, cold sweats, a fluttering pulse, and coma supervening on delirium, denote a fatal termination: on the contrary, when there is a copious hæmorrhage from the nose, mouth, or lungs, or even from the urinary passages or hæmorrhoidal vessels, or when diarrhœa ensues, when the delirium is relieved by sleep, and the patient remembers his dreams, when the perspiration is free and general, the deafness diminished or removed, the pulse less frequent but fuller and soft, and the febrile symptoms become milder, there are hopes of recovery.

*Treatment.*—The first indication to be answered in the treatment of Phrenitis, is to equalize the circulation, and to check the great determination of blood to the head. This important object can be happily effected by the timely application of the vapor bath, and rubefacients to the lower extremities. Place the patient over the steam, and confine it below the waist; meanwhile use the rubefacients for the purpose of revulsion. This being completed, place the patient in bed, and let warm stones be placed about the feet and legs, and proceed to give a full course of medicine. At this time, if the symptoms suffer an abatement, give tonic medicines and light, nourishing food. If the symptoms should return, repeat the above treatment until you have completed the object, namely, an equilibrium of circulation. It may not be improper whilst the patient is over the bath, to bathe the head and neck with cold vinegar, or water. During the whole time the strictest quietude must be enjoined. The bowels should be relieved by the use of the syringe or aperient medicine.

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## OPHTHALMIA, OR INFLAMMATION OF THE EYE.

OPHTHALMIA is of two kinds, viz: the idiopathic and symptomatic; the latter proceeding either from diseases of the eye, or parts in its neighborhood, or from diseases of the system; and the former from the causes hereafter assigned.

In ophthalmia, the inflammation is seated either in the membranes of the eye, its deep-seated parts, muscles, and the lachrymal gland, or in the sebaceous glands placed in the edges of the eyelids : but sometimes all these parts are affected in consequence of sympathy ; and indeed it rarely happens that any of these suffer in a considerable degree without the inflammation extending further. It readily spreads along from one part to another—from one coating to another in either direction ; and when the complaint increases, it gradually spreads to the deep seated parts.

With some people there is a great tendency to a recurrence of the disease ; and in many cases it has been observed to renew its attacks, or to have regular exacerbations, at a particular time of the day.

The causes producing ophthalmia are, external injuries, such as blows, contusions, and wounds on the eyes ; extraneous bodies of an irritating nature, introduced under the eyelids ; exposure to bleak winds and cold ; little inflammatory tumours, called styes, which rise on the eyelids ; various acrid fumes acting as chemical stimuli, such as the smoke of pitcoal, that of wood, turf, &c. ; too free a use of vinous and spirituous liquors, the suppression of accustomed discharges, the long application of a strong light, or fixed attention to minute objects, and an acrimony prevailing in the mass of blood. To these causes we may, perhaps, add with some propriety the bare inspection of the eyes of a person when in a highly inflamed state. Ophthalmia is sometimes symptomatic of other diseases, such as measles, small-pox, scurvy, scrofula, and syphilis.

A very obstinate and dangerous species of ophthalmia of the purulent nature is now and then produced by the accidental application of gonorrhœal matter to the eye, or eyes. A distressing case of this nature, wherein the patient, a very stout man, was forever totally deprived of sight by imprudently washing his eyes with his urine, whilst laboring under gonorrhœa.

Mons. Sonnini, in his travels through Egypt, mentions, that ophthalmia is a complaint which is endemical in that country, and that eyes perfectly sound, or which are not swelled, are rarely to be seen. This he attributes to the excessive heat, the air being impregnated with noxious particles, and the acrid and burning dust which the winds scatter in the atmosphere. Another cause of this disease so general at Cairo, he says, is the frequent watering of the streets and houses. Water, thrown abundantly and frequently upon a burning soil, containing a great many saline particles, produces, he observes, acrid vapors, which may be considered as one of the principal causes of blindness in Egypt.

Sir Robert Wilson mentions, that the Egyptian ophthalmia is supposed to originate in the nitrous particles emitted from the ground by the force of the sun, which are of a quality so pungent and penetrating as to injure the fine vessels of the eye. The acrid and burning dust flying continually in the atmosphere, irritates still more the already affected part ; while the reflection of the soil, the heat of the air, and vivid light of the sky, tend to weaken the sight, at last occasioning excessive inflammation.

According to the best information which we have received, this species



of ophthalmia arises in the first instance soon after the overflowing of the Nile, or rather on its recession, when a vast quantity of limy mud is deposited on its banks and other places which were overflowed, and which being acted upon by a powerful sun, send forth miasma, or effluvia, that excite inflammation in the eyes of this peculiar nature. The custom in Egypt of sleeping in the open air, possibly may increase the power of the cause.

Ophthalmia has not been considered in Great Britain as a contagious disease, although it has often been known to appear as a prevailing epidemic at different times; but it is an undoubted fact, that the Egyptian species is highly contagious. During the campaign in Egypt the British troops were dreadfully afflicted with it, and many returned with a total loss of sight; whilst others, still laboring under the disease, propagated it at Malta and Gibraltar, where they first landed; and from which places it was at length carried to other countries.

The influence of climate, and other local circumstances, on the general character and progress of the disease, cannot, however, be denied. In most of the instances in which this species of ophthalmia has prevailed in this country, it has appeared with mitigated symptoms, in comparison with the disorder as it occurs in Egypt; but it has nevertheless been observed, that where the patients were exposed to the influence of a marshy soil, it equalled in the severity of its symptoms the Egyptian ophthalmia. A modern writer assures us, that its spreading is not owing to contagion in the ordinary sense of the word, (that is, to any infectious matter thrown off from the system of those laboring under the disease, and operating at a greater or less distance from its source,) but to the actual conveyance of the purulent matter from the inflamed organ to the eye of the person in health. Dr. Edmonston has also pointed out, that the sphere of action of this contagion is very limited, and that most of the cases which came under his observation arose from the direct application of virus from diseased to sound eyes.

It has been indeed ascertained as a fact, that many soldiers, with the hope and view of obtaining a discharge from their regiments, absolutely inoculated their eyes with the contagious matter, thereby inducing a loss of sight in one or both.

The late Mr. Ware was of opinion, that the disease which has appeared as a prevailing epidemic among soldiers since the return of the British troops from Egypt, ought to be denominated the purulent ophthalmia instead of the Egyptian; since one of its chief symptoms, and that which distinguishes it from any other, is the profuse discharge of a purulent colored fluid, closely resembling the pus or matter that issues from an ulcerated surface. He also thinks that it greatly resembles, in many respects, a disorder, which he has described with minuteness in his observations relative to the eye, under the title of the Purulent Eye of new-born Children, and in which, no less than in that under consideration, the discharge of matter is always profuse.

The common ophthalmia usually comes on with a sensation as if some gritty particles had insinuated themselves under the eyelids, accompanied with great heat, redness, and pricking, darting pains. As it increases, the parts swell, and the vessels of the eye become not only

increased in size, and turgid, but appear more numerous than in the natural state. Great pain is excited upon the least motion of the ball of the eye; the patient cannot bear the light; and an affusion of tears from the lachrymal gland ensues, which is of so acrid a nature as to excoriate every part on which it happens to fall. When the inflammation runs high, a slight febrile disposition often attends. These appearances, after some days' continuance, gradually abate, and at length entirely cease; but in some cases, a discharge of thick glutinous matter ensues, which collects in considerable quantities about the angles of the eye, particularly during sleep. Where only one eye has been affected, it is often succeeded by an inflammation of the other, particularly in a scrofulous habit.

In the Egyptian ophthalmia, the symptoms which present themselves are somewhat different from those of common ophthalmia. In the early stage of the former, the conjunctiva is red, swelled, and turgid; the secretion of tears is copious; the patient complains of excessive pain, and roughness of the ball of his eye, and he cannot bear even a feeble light. The eyelids are red at their edges, and swelled, and there is often a sense of weight and scalding of the eye. Sometimes there is a soreness of the integuments of the forehead and temples, with rigors, a quick hard pulse, headache, and other febrile symptoms. In a very short time, œdematous swelling and tension of the eyelids, and prodigious tumefaction and turgescence of the conjunctiva, with a feeling as if the eye was about to burst out of the head, succeed to the other symptoms. The least ray of light falling on the retina gives acute pain, and excites in the patient the feeling as if some sharp instrument was thrust into his eye.

In some cases the under eyelids are turned somewhat outwards; in others both eyelids are closed and swollen, and the skin of these parts has an efflorescent shining appearance. It is not unusual to see the eyelids open, and the conjunctiva so swelled and turgid as to protrude from the eye in the form of two or three folds. When the tumefaction of the conjunctiva is not very great, and the eye can be brought fully into view, the cornea sometimes appears pellucid, the pupil is contracted, and the iris discolored, or, as it were, full of spots.

As the inflammation proceeds, a secretion of purulent-like matter takes place from the surface of the conjunctiva and glands of the tarsi. This matter is pent up for some time within the eyelids in those cases in which the tarsi come in contact; but in others, where they remain separated, it flows from the eye mixed with tears. It is so acrid as to irritate the eye exceedingly, and to excoriate the cheeks in passing over them. In this stage of the disease the sufferings of the patient are excessive. He is hot and feverish, cannot remain long in one posture or situation, gets no sleep either by night or day, and describes his feelings, as if boiling water was poured into his eyes.

If a sight of the ball of the eye can now be obtained, it is found bathed with the purulent matter; the cornea is muddy in a part or the whole of its extent, or its surface is studded with small white spots. These appearances denote the commencement of a suppuration of the cornea. Sometimes the whole of the cornea is included in the suppuration, and

destroyed; the iris is laid bare, the lens and vitreous humor are forced on the iris, or entirely evacuated, and even the form of the eye does not remain. At other times only a portion of the cornea suppurates, and the sight is more or less affected afterwards, according to the point at which the suppuration has taken place, and the extent to which it has gone. If the abscess be situated before the pupil, and if it penetrate the whole depth of the cornea, the aqueous humor, in escaping, will carry with it a portion of the iris through the aperture in the cornea; and the pupil will be in general totally obliterated by the protrusion of the iris, and its subsequent adhesion to the sides of the ruptured cornea.

During some violent paroxysm of pain, from the excessive increased volume of the whole of the eye, locked within the orbit, the coats of the eye at length give way. By this circumstance the tension in the parts is considerably diminished, the inflammation gradually subsides, and the state of the eye begins to improve, unless in the melancholy instances in which the iris continues to protrude.

Such is the most violent form of the disease; but even in slighter cases, where no rupture of the cornea takes place, on the discharge of pus ceasing, a number of granulations are sometimes perceived to arise, on an inspection of the eye, from the interior of the eyelids, and to present a shocking spectacle.

With some, the Egyptian ophthalmia lasts only nine or ten days; in others, the patients have suffered for months; and unfortunately there is no security, we are informed, against a new attack, even after a perfect recovery.

The common ophthalmia, when slight and not symptomatic of any other disease, will readily give way to proper means; but if it is very violent, or has continued for any length of time, it is apt to occasion specks, or to terminate in a dimness of sight or opacity of the crystalline lens. In some cases, the inflammation terminate in suppuration of the cornea and deep-seated parts. When it arises in a scrofulous habit, or is symptomatic of syphilis the cure is often tedious.

In the treatment of ophthalmia, its varieties of idiopathic and symptomatic, and of acute and chronic, ought duly to be considered, and to form the basis of our practice. Our object therefore should be, to determine with precision, how far each particular case is to be referred to one or other of these kinds, and to adopt our plan accordingly.

Those who are engaged in an extensive practice, now and then meet with cases of idiopathic and acute ophthalmia, accompanied not only with a high degree of organic inflammation, but likewise with much systematic derangement, such as thirst, great heat of the body, fulness and frequency of the pulse, severe pains in the head, and violent throbbings of the temporal arteries.

Mr. Ware was of opinion that the purulent is very similar to the gonorrhœal ophthalmia. He found the purulent eye, we are told, most commonly to occur in the children of those women who have had an acrimonious discharge from the vagina at the time of delivery; and the purulent ophthalmia of adults, he thinks, is very generally found connected with some gonorrhœal affection. In public schools he noticed the disease to spread obviously in consequence of the indiscriminate use of

basins and towels among the children. Hence, he believes that the purulent ophthalmia arises from the direct application of some poisonous matter to the eyes.

Dr. Gibson, seems to have been the first to attribute this disease in new-born infants to the cause just assigned; and he thinks it highly probable, from the frequent coincidence of fluor albus in the mother, and the puriform ophthalmia in the child, that these disorders stand in the relation of cause and effect to each other: but, at the same time, he by no means wishes it to be understood as supposing leucorrhœa to be the only cause of a puriform discharge from the eyes of an infant. In some cases, it possibly may arise from exposure to cold, or from a peculiar constitution of the atmosphere.

Mr. Ware appears to have described and treated one of the symptoms of purulent ophthalmia as if constituting it, and seems to have overlooked the relation between the inflammation and the discharge, of cause and effect. He states the first stage of the disease to be an increased discharge from the minute pores of the conjunctiva; and attributes the subsequent affection of the cornea to the eroding quality of the retained matter, joined to the pressure of swollen eyelids.

*Treatment.*—Frequent and thorough courses of medicine must be relied on to subdue inflammation in its active stages in this distressing disease.

Frequent steamings will be serviceable, and if possible, the *local bath* should be adopted, medicated with some anodyne, emollient herbs. Warm soothing applications for a limited time will frequently be seen to produce a good effect.

In the very early, or more advanced stages, the vegetable astringent application, either lotion or poultices should not be neglected. Great care must be taken during the whole course of treatment to keep the eyes and parts connected, freed from the purulent discharges incident to the complaint. Composition with a small quantity of lobelia should be given at intervals, to keep up an action upon the surface.

The bowels should also be kept open by gentle laxatives. Every thing must be avoided that might occasion irritation; therefore, due care should be directed to the quantity of light admitted to the room of the patient—reading, writing and spirituous liquors should be positively interdicted.

## OTITIS, OR INFLAMMATION OF THE EAR.

INFLAMMATIONS of the ear are for the most part unaccompanied by pyrexia, although the sufferings of the patient are sometimes very great; but in some instances they are attended with fever, assume a formidable appearance, coma, delirium, and convulsions supervene, and even a fatal termination has been the consequence.

Otitis is produced by the same causes with other inflammations, but by none more readily than exposure to cold.



*Treatment.*—In the treatment of this complaint in its inception, if the pain does not give way by two or three courses of medicine, and a deficient local remedy, and should continue to increase, suppuration may then be expected to ensue. This we may then encourage by the application of warm, emollient poultices; and when the abscess bursts, or is opened, we may syringe the ear from time to time with astringent decoctions.

When otitis is accompanied with universal pain diffused over the whole head, fever, delirium, or coma, the most powerful general means are to be combined with the local ones, as recommended in phrenitis.

Suppuration is generally the consequence of these violent forms of the disease, and then the structure of the whole internal ear is often destroyed, the bones being discharged through the meatus auditorius with much purulent and fetid matter. In such cases, the sense of hearing in the ear affected is wholly lost, of course.

Fistulous ulcers of the internal ear are now and then the consequence of suppuration, and prove very troublesome.

Ear-ache sometimes continues many days without any apparent inflammation, and is then frequently removed by filling the ear with cotton or wool, wet with third preparation and olive oil.

The remedial agents are to be applied to the primary cause. Scarlet fever, or canker rash, occasionally terminates in a fistulous ulcer and a chronic discharge from the ear. This occurs more frequently in children, and when it assumes that form, is sometimes very protracted, continuing for years, defying all constitutional local remedies. In the application of the treatment, the compound syrup of sarsaparilla with frequent astringent injections, with unremitted, full courses of medicine and tonics, have been found most serviceable.

## CYNANCHE TONSILLARIS, OR INFLAMMATORY SORE THROAT.

In this complaint the inflammation principally occupies the glands, such as the tonsils; but it often extends through the whole mucous membrane of the fauces, so as essentially to interrupt the speech, respiration, and deglutition of the patient.

It is readily to be distinguished from cynanche maligna by the strength of the pulse, the greater difficulty of deglutition, the absence of ulcers in the throat, and the accompanying fever being synocha.

The causes which usually give rise to it are, exposure to cold, either from sudden vicissitudes of weather, from being placed in a partial current of air, wearing damp linen, sitting in wet rooms, or getting wet in the feet, or coming out of a heated and crowded room suddenly into the open and cool air; all of which may give a sudden check to perspiration. It may also be occasioned by violent exertions of the voice, blowing

wind instruments, acrid substances irritating the fauces, and by the suppression of accustomed evacuations. It principally attacks the youthful, and those of a full and plethoric habit; and is chiefly confined to cold climates, occurring usually in the spring and autumn; whereas the cynanche maligna chiefly attacks those of a weak irritable habit, and is most prevalent in warm climates. The former differs from the latter likewise in not being contagious. In many people there seems to be a particular tendency to this disease, as from every considerable application of cold it is readily induced.

An inflammatory sore throat discovers itself by a difficulty of swallowing and breathing, accompanied by a redness and tumor in one or both tonsils, dryness of the throat, foulness of the tongue, lancinating pains in the parts affected, hoarseness of the voice, a frequent but difficult excretion of mucus, and some small degree of fever. As the disease advances, the difficulty of swallowing and breathing becomes greater, the speech is very indistinct, the dryness of the throat and the thirst increase, the tongue swells and is encrusted with a dark fur, and the pulse is full, hard, and frequent, beating from 100 to 140 in a minute. In a few cases, small white sloughy spots are to be observed on the tonsils, and in very violent ones there is complete deafness. When the symptoms of cynanche are considerable, the whole face partakes of it, the eyes are inflamed, and the cheeks florid and swelled, respiration is performed with difficulty, and the patient is obliged to be supported in nearly an erect posture to prevent suffocation. Even delirium and coma sometimes supervene. If the inflammation proceeds to such a height as to put a total stop to respiration, the face will become livid, the pulse will sink, and the patient quickly be destroyed.

The chief danger arising from this species of quinsy is, the inflammation occupying both tonsils, and proceeding to such a degree as to prevent a sufficient quantity of nourishment for the support of nature being taken, or its wholly impeding respiration: but this seldom happens, and its usual termination is either in resolution or suppuration. When proper steps are adopted early, it will in general readily go off by the former. Cynanche tonsillaris rarely terminates either in gangrene or scirrhus.

Little fever, free respiration, deglutition not much impeded, the inflammation being of a vivid red color, universal but gentle diaphoresis, and a copious ptyalism or moderate diarrhoea coming on about the fifth day, are to be regarded as symptoms which denote a termination of the disease in resolution.

When suppuration is likely to ensue, the parts affected become more pale and less painful, a sense of pulsation is felt in them, and there are slight rigors. The suppuration sometimes takes place at the lower part of the tonsils, and then the matter is discharged into the œsophagus, and passes into the stomach, and it is only known to have happened by the immediate relief which the patient experiences. Sometimes, however, it is brought up, and discharged by the mouth, being of a very clotted appearance, often mixed with blood, of a nauseating, bitter taste, and fetid smell. The relief experienced by the discharge is often very remarkable from its suddenness; for the person who a few minutes be-

fore was not able to swallow the smallest quantity of any thing, and who breathed with great difficulty, now feels perfect ease, and is able to eat and drink heartily. Sometimes, however, the disease does not terminate by a proper suppuration, but in several small abscesses, which produce trifling superficial ulcers, being of a white or gray color, similar to aphthæ; whereas those in cynanche maligna are of a dark-brown, or black color. If gangrene is to take place, the parts affected lose their red and shining color, and from being tense and tumid, they become flaccid, brown, and livid; the pulse, from being strong, becomes small, weak, and irregular; the face assumes a cadaverous appearance; cold clammy sweats break out; the extremities are cold; coma, and symptoms of debility make their appearance, and destroy the patient.

Where cynanche tonsillaris has proved fatal by suffocation, little more than a highly inflamed state of the parts affected, with some morbid phenomena in the head, have been observed on dissection.

*Treatment.*—In the treatment of this complaint, our first endeavor should be to carry off the inflammation, for which purpose full courses of medicine should be pursued, and more particularly if the inflammatory symptoms run high—pulse quick and hard, and breathing somewhat difficult. This course of treatment before the febrile symptoms are any way violent, often checks any complete formation of the disease. To assist, also, in removing the inflammatory tendency, gentle evacuations from the bowels by means of mild laxatives, should be advised occasionally.

In those cases where the inflammation is considerable, the early application of a cataplasm of mustard round the throat, or to the back of the neck, will most probably be attended with a good effect; but in slight it will be sufficient to have these parts rubbed twice or thrice a day with some stimulating embrocation, such as No. 6, or 3d Preparation, putting a piece of flannel round them afterwards.

In this complaint it is found of service to wash the mouth and fauces frequently with astringent gargles, and likewise to scrape and cleanse the tongue from the fur which is apt to collect on it. A strong infusion of bayberry and sage, or the tea of composition, may be advantageously recommended as gargles in the milder forms of this disease. When white sloughy specks are observed on the tonsils, we may substitute the gargles advised for cynanche maligna, for those recommended here; the best of which, are the compound tincture of myrrh, or No. 6, as strong as it can be used, and a strong preparation of capsicum and vinegar.

Gargling is the best mode of washing the internal fauces; but its motion is sometimes so painful or irksome, as to prevent the patient from having recourse to it. In such cases, the medicine may be thrown into the fauces by means of a syringe.

Frequently inhaling the vapor arising from warm water mixed with a little vinegar throughout the course of the day, will greatly assist the effects of gargles; and probably the best means to accomplish this purpose, will be a basin containing the liquid with an inverted funnel over it. Diaphoretic medicines should frequently be employed, with a view of determining to the surface. Any of those advised under this head, in almost any case, may be given.

If our endeavors to resolve the inflammation have proved fruitless, and it seems likely to terminate in a suppuration, we ought then to hasten it by the frequent application of warm fomentations and emollient poultices to the throat; and by directing the patient to receive the vapor arising from warm milk and water into the fauces several times a day, in the manner before recommended.

Warm gargles composed of a decoction of barley-water, may also be employed, and the best way of using it will be to permit as large a quantity as can conveniently be retained to lie on the part till it cools to the temperature of the mouth. When the matter is formed, if the tumor does not break readily, a lancet may be applied to it.

During this stage of the disease, the passages to the stomach and lungs are sometimes so closed by the size and pressure of the tumor, as to endanger the life of the patient, either by suffocation, or the want of nourishment. In the first case, recourse should be had in proper time to the operation of bronchotomy, in order to keep up respiration; and in the last, the strength must be supported by nutritive and mucilaginous clysters, consisting of animal broths, thick gruel, arrow-root, barley-water, or a solution of starch, which should be thrown up the intestines in a small quantity each time, as they will thereby be absorbed the more readily, and will not be so apt to pass off again, without affording any benefit.

Before we resort, however, to bronchotomy, it may be worthy of a trial to endeavor to break the tumor, either by exciting vomiting, or by making the patient receive through an inhaler the steams arising from warm water and vinegar. The stimulus will prove so great as to succeed in many cases, particularly where the suppuration is nearly completed.

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### CYNANCHE PAROTIDÆA, OR THE MUMPS.

THIS disease chiefly affects children, but particularly among the lower class of people; is often epidemic, and manifestly contagious.

It is distinguished by an external moveable swelling that arises most commonly on both sides of the neck, but in some instances it is confined to one. These tumors occupy the maxillary and parotid glands; are large, hard, and somewhat painful; sometimes they attain to such a considerable size, as greatly to impede the powers of respiration and deglutition, giving rise thereby to pyrexia. The swelling usually continues to increase till the fourth day; but from that period it declines, and in a few days more goes off entirely, and then the febrile disposition likewise ceases. As the swelling of the fauces subsides, it not unfrequently happens that tumors affect the testicles in the male sex, or the breasts in the female; but these generally go away in a few days. Sometimes the tumor in the fauces becomes suddenly suppressed, and it is not accompanied with the last mentioned symptom; or if so, this is quickly re-



pressed; in which case the fever becomes very considerable, is attended with delirium, and at length proves fatal. In a few instances where the swelling has been very great, suppuration has taken place in the cellular membrane, and occasioned prodigious deformity; or by bursting inwardly, and discharging its contents into the larynx, has suffocated the patient.

There is, however, seldom much danger from this disease, except when symptoms of contagion in the brain or its membranes arise.

*Treatment.*—The mumps do not often require the assistance of medicine; and all that is in general requisite is, to keep the head and face warm, to avoid taking cold, and to open the bowels by the mildest laxatives; but should the tumor in the neck suddenly disappear, and the febrile symptoms increase, so as to induce an apprehension that the brain will be affected, it will be advisable to promote and reproduce the swelling by warm fomentations and stimulating liniments; and to obviate the fatal consequences that might ensue from its suddenly receding, by means of composition and small repeated doses of lobelia. When the testicles become affected and are much swelled, every endeavor should be exerted to prevent suppuration from ensuing, and we are, therefore, to have recourse to full and repeated courses of medicine. A suspensory bag and discutient local application should be applied. Much the same means should be adopted when in a retrocession of the tumor in the neck, the female breast becomes indurated and swelled.



### CYNANCHE MALIGNA, OR PUTRID SORE THROAT.

The putrid sore throat is readily to be distinguished from the inflammatory quinsy by the soreness and white specks or aphthæ covering ulcers which appear in the fauces, together with the great debility of the system, a small fluttering pulse, and an eruption on the skin of the same nature with that of scarlatina, which are to be observed in the former; whereas in the latter there is always great difficulty of breathing, a considerable degree of tumor, with a tendency in the parts affected to suppurate, and a hard full pulse. Moreover, in the former disease the inflammation is seated principally in the mucous membrane of the mouth and throat, and the accompanying fever is of the typhoid type; whereas in the latter, it chiefly occupies the glandular parts, and the fever is of the inflammatory kind.

The putrid sore throat often arises from a peculiar or humid state of the atmosphere, and so becomes epidemical, making its attacks chiefly on children, and those of a weak lax habit, principally about autumn and the beginning of winter. It is produced likewise by contagion, as it is found to run through a family, when it has once seized any person in it; and it proves often fatal, particularly to those in an infantile state. In some instances the symptoms of scarlatina and cynanche maligna are so blended together, that it is difficult to say of which disease they partake most:

in a practical view this is however of no importance, as both disorders require a similar treatment.

By some physicians *scarlatina anginosa* and *cynanche maligna* have however, been considered distinct in their nature; but from the observations which I have made, I am induced to look on them merely as modifications of the same disease; for I have noticed it under all its different forms in the same epidemic, and even in the same family from the same contagion.

The putrid sore throat sometimes attends on measles which are of a malignant nature.

*Cynanche maligna* usually makes its attack with cold shiverings, anxiety, nausea, and vomiting, succeeded by heat, restlessness, thirst, debility, and oppression at the chest; the face looks flushed, the eyes are red, and a stiffness is perceived in the neck, with a hurried respiration, hoarseness of voice, and soreness in the throat; and upon viewing the internal fauces, there appears a fiery redness in every part, with some slight degree of swelling in the tonsils, which, however, is by no means so great as to impede either respiration or deglutition.

The inflammation, after a short time, takes a peculiar termination; for, upon a further inspection into the throat, a number of sloughs of a shade between a light ash color and a dark brown are to be observed on the tonsils and fauces, and the breath is highly offensive, the tongue is covered with a thick brown fur; and the inside of the lips is beset with vesicles, containing an acrid matter, which, falling on the corners of the mouth and other parts, occasions excoriation. With these symptoms there is likewise a coryza, which pours out a thin acrid matter, excoriating the nostrils. A purging often attends also, particularly in infants, and a thin acrid matter flows from the anus, excoriating this and the neighboring parts.

From the first attack of the complaint there is a considerable degree of fever, with a small, frequent, and irregular pulse: and every evening there occurs a manifest exacerbation, and in the morning some slight remission, together with debility and general loss of strength. In some cases the brain is affected with delirium of the low muttering kind, or coma.

About the second or third day, large patches of a dark red color make their appearance about the face and neck, which by degrees become dispersed over every part of the body, even to the extremities of the fingers, which feel swelled and stiff. These eruptions, after continuing for about four days, depart without producing any remission of the symptoms.

The inflammation, as in the *cynanche tonsillaris*, sometimes spreads along the eustachian tube to the internal ear, occasioning ulceration, and sometimes wholly destroying its structure. In other cases it extends to the parotid, maxillary, and other glands of the fauces, which become swelled and painful. The whole neck, indeed, sometimes swells, and assumes a dark red color.

As the sloughs spread they generally become of a darker color, the interstices at the same time assuming a purple hue; new specks arise, and the whole internal fauces are at length covered with thick sloughs,

which, when they fall off, discover ulcers sometimes very deeply seated.

In the worst cases, the fauces appear quite black, the sloughs corrode deeper and deeper, and spread throughout the whole of the alimentary tube, so as to terminate at last in gangrene; and the symptoms of irritation continuing to increase, together with a severe purging coming on, the patient is cut off; which event happens usually before the seventh day, and, in some cases, so early as on the third.

Where there is a great increase of the evening paroxysm of fever, with vast debility, depression, or irregularity in the pulse, early delirium, coma, much vomiting, diarrhœa or subsultus tendinum, and these are accompanied with considerable swelling of the throat, and dark-colored spreading ulcers, with great fetor of breath, petechiæ, or hæmorrhage, the disease will certainly terminate fatally; but where the pulse becomes moderate and stronger, the respiration freer, the skin soft and moist, the efflorescence copious on the surface of the body, the florid color begins to return to the fauces, and a better matter to be discharged from the ulcers, with less acrimony in that which flows from the nares, we may expect a favorable termination. In slight cases, where the fever is of a less putrid nature, and the symptoms are moderate, and where the appearance of the efflorescence is succeeded by a remission, and this remission of the fever increases daily in the progress of the disease, we need not apprehend danger.

Cynanche maligna generally arrives at its height about the fifth or sixth day, and in cases which terminate favorably, declines in five or six days. It has, however, been observed to run through its course more slowly in adults than in children. Twenty or thirty of the latter for one of the former are destroyed by this disease; owing most likely to their not being able to wash off the acrid ichorous matter from the throat and fauces by gargling as adults do, and which by passing down the œsophagus, produces affections of the stomach and bowels, as likewise excoriations about the anus.

It sometimes happens that cynanche maligna appears without any affection or efflorescence of the skin, in the same manner as we meet with scarlatina without any ulceration in the throat: in general, however, the affections of the throat and skin are combined, and seem wonderfully influenced by the state of each other. But while the absence of the sore throat in scarlatina always denotes a favorable prognosis, that of the eruption in cynanche maligna generally affords an unfavorable one.

The eruption in cynanche maligna is seldom uniformly diffused, but comes out in blotches or small points scattered over the trunk and extremities, which are rarely of a florid red, but of a dark purplish or livid hue, and which terminate in but a very scanty desquamation. As in other eruptive fevers, the eruption in this sometimes suddenly recedes, and an alarming train of symptoms arise. The patient becomes dropsical, the countenance assumes a cadaverous appearance, and convulsions supervene which terminate in death. The same consequence has ensued on the eruption suddenly assuming a very pale or livid appearance. A florid color of the eruption, with a uniform diffusion of it over the body, and a copious desquamation afford a favorable prognosis.

From dissections, it appears that in this disease the fauces are inflamed, suppurated, and often gangrenous: and that the trachea and larynx are likewise in a state of inflammation, and lined with a viscid fetid matter. In many instances the inflammatory affection extends to the lungs themselves. Large swellings of the lymphatic glands about the neck, occasioned by an absorption of the acrid matter poured out in the fauces, are now and then to be found. The same morbid appearances which are to be met with in typhus gravior present themselves in other parts of the body.

Cynanche maligna, as it differs very much in its nature and appearance from cynanche tonsillaris, differs also very much in its treatment; and this difference depends upon the former being attended with a fever of the typhoid nature, and a strong disposition to gangrene in the ulcerated parts.

*Treatment.*—The grand object to be kept in mind in this malignant disease, should be to check or counteract the septic tendency which prevails, to wash off from time to time the acrid matter from the fauces, and obviate debility. But in the *commencement* full courses of medicine will almost always extinguish the disease, if repeated and persevered in. Cathartics infallibly prove injurious, by increasing the irritability, which naturally is very great, and we are naturally deterred from their use, by observing that a diarrhœa, arising even spontaneously, always does harm, and often proves fatal. The regular expulsion of the dejections is, therefore, to be solicited by clysters, and these to be had recourse to, when nature is defective.

To check the septic tendency in the parts, as well as to remove the acrid matter which is secreted, it will be necessary here, to use frequently the No. 6 as a gargle, and as strong as the patient can be induced to bear it; but as young children cannot be prevailed upon to gargle, the throat and fauces may be much benefitted by the internal local application of this remedy, by means of a soft rag fastened to the end of a small stick, and frequently introduced to moisten the parts implicated.

When the severity of the disease has somewhat subsided and the sloughs have separated, the sores should be frequently touched by the swab, or hair pencil, dipped in an infusion of bayberry and sage, or bayberry and raspberry sweetened with honey or loaf-sugar. In addition to the above treatment, lobelia emetics should be given as often as every other day, and oftener if the urgency of the symptoms should require. Perspiration should be constantly promoted by the frequent exhibition of the composition and other sudorific agents.

If in the progress of the last stages of the disease, hæmorrhage should take place from the mouth, nose or ears, it ought always to be checked by the immediate application of the strongest anti-septics, such as No. 6, the third preparation, and, at the same time, the internal administration of the best tonics conjoined with No. 6, should not be omitted.



## CYNANCHE TRACHEALIS, OR CROUP.

THE croup is an inflammatory affection of the mucous membrane of the trachea and larynx, excited so high as to stimulate the vessels to throw out coagulated lymph, instead of inducing only an increased and altered secretion, according to the customary action of those membranes. In many instances it extends even to the bronchial ramifications and surface of the lungs, producing an exudation that appears partly in a membranous coating, and partly in fluid resembling pus, and is attended with a peculiar wheezing sonorous inspiration, compared by some to the crowing of a cock, a similar or stridulous sound in coughing and speaking, great difficulty of breathing, thirst, and other febrile symptoms, as likewise by some degree of spasmodic affection. Children are most liable to attacks of this disease.

Some physicians have judged it proper to divide croup into two species, viz: idiopathic, where the disease is primarily and extensively seated in the trachea, bronchiæ, and surface of the lungs; and symptomatic, where it appears as the consequence of some previous disorder, such as the measles, scarlatina, or cynanche maligna, for it has at times been found as the attendant of these complaints. The distinctions into spasmodic and inflammatory must be objected to, as the disease is always to be considered as arising from inflammation.

The croup may be distinguished from acute asthma by the following diagnostics: in the former, the cough is frequently ringing in our ears, whereas, in the latter there is little or no cough. In croup there is seldom, if ever, any remission, whereas in the acute asthma it is one of the most striking phenomena of the disease, and it is attended with some evacuation, such as belching, vomiting, or purging. In croup, the pulse is strong, with much febrile heat, the urine high colored, and the voice shrill and small: in acute asthma, the pulse, although perhaps equally quick, is less full, the urine is limpid, and the voice croaking and deep.

The inflammation in the croup appears of a very peculiar and singular nature. If it was like that met with in common, we might expect to find the same kind of concretion on the surface of the trachea every day, as its mucous membrane is so frequently the seat of inflammation, attended with an increased secretion. The matter, however, of which this substance is formed, possesses different properties from those of the mucous which is thrown out upon the membrane of the nose, or of the trachea, in common catarrhal affections. Most practitioners from thence have been induced to suppose, that the film which we find in the croup is not formed by a secretion from the mucous glands, but is an exudation from the exhalent arteries, and that it is analogous to the inflammatory exudation from the inflammation of other internal membranes, first described by the late Dr. Hunter. Upon this principle we can indeed more easily account for such a film not being found in common catarrhal affections, in which the mucous glands are, perhaps, more the seat of the disease. The opinion now universally entertained is, that the new membrane formed in croup is nothing but coagulated lymph.

The croup does not appear to be contagious, but it sometimes prevails

epidemically. It seems, however, peculiar to some families; and a child having been once attacked, is very liable to its returns, at uncertain periods, from any slight exposure to cold; but then its attacks are usually less severe. It is likewise peculiar to children from the age of a year to eight or ten, particularly the ruddy and robust, and has rarely been known to attack a person arrived at the age of puberty.

The application of cold seems to be the general cause which produces this disorder, and therefore it occurs more frequently in the winter and spring, when the weather is stormy and blowing, than in the other seasons. It has been observed to be most prevalent near the sea-coast, where the air is loaded with moisture, and the changes of the weather are sensibly experienced; but it is frequently met with in inland situations, and particularly those which are marshy. It is less known in the temperate than in the northern regions of Europe.

A day or two previous to an attack of the disease, the child appears drowsy, inactive, and fretful; the eyes are somewhat suffused and heavy, and there is a cough, which from the first has a peculiar shrill sound; this, in the course of two days, becomes more violent and troublesome, and likewise more shrill. Every fit of coughing agitates the patient very much; the face is flushed and swelled, the eyes are protuberant, a general tremor takes place, and there is a kind of convulsive endeavor to renew respiration at the close of each fit. As the disease advances, great difficulty of breathing prevails, accompanied with a swelling and inflammation in the tonsils, upper part of the throat and fauces, and the head is thrown back in the agony of attempting to escape suffocation. There is not only an unusual sound produced by the cough, but respiration is performed with a hissing noise, as if the trachea was closed up by some light, spongy substance, and thought by some to resemble the sound of a piston forced up a dry pump, or the crowing of a cock. The cough is generally dry; but if any thing is spit up, it has either a purulent appearance, or seems to consist of films resembling portions of a membrane. Where great nausea and frequent retchings prevail, coagulated matter of the same nature is brought up. With these symptoms there is much thirst, an uneasy sense of heat over the whole body, a continual inclination to change from place to place, great restlessness, and frequency of the pulse. Very often the symptoms suffer considerable and sudden remissions and exacerbations.

In an advanced stage of the disease, respiration becomes more stridulous, and is performed with still greater difficulty and some degree of spasmodic affection, being repeated at longer periods, and with greater exertions, until at last it ceases entirely.

The croup is to be considered as a very dangerous disease, and which sometimes will destroy the child quickly by suffocation, induced either by spasm affecting the glottis, or by a quantity of matter blocking up the bronchiæ: but when it terminates in health, it is by a resolution of the inflammation, by a cessation of the spasms, by relief to the dyspnoea, and the voice becoming natural, with a copious and free expectoration of the matter exuding from the trachea, or of the membrane formed there. The unfavorable symptoms are, considerable difficulty of breathing, great anxiety, violent fever, frequent fits of coughing, no expecto-

ration, the voice becoming more shrill, and the pulse irregular and intermitting.

The disease has, in a few instances, terminated fatally within twenty-four or thirty hours after its attack; but it more usually happens, that where it proves fatal, it runs on to the fourth or fifth day. Where portions of the membranous film, formed on the surface of the trachea, are thrown up, life is sometimes protracted for a day or two longer than would otherwise have happened. More than one half of the cases of croup terminate fatally. The younger the patient, the greater will be the danger.

On opening the bodies of children who have died of the croup, it is not unusual to find the lungs in a healthy state; but in some instances they are inflamed on particular points of their surface, and in others, adhesions to the pleura are discovered; occasionally they are found full of dark-colored blood and serum, and sometimes a quantity of pus is met with. In tracing the bronchiæ throughout their minute ramifications, they are usually found filled with mucus, but which is of a firmer consistence in the trachea, and, as it were, pasted on the surface of the tube, forming a membranous-like concretion, of variable color and texture. The upper part of the trachea is the most usual seat of deviation from the natural structure; but this is sometimes observed also in the lungs, and extending to the smallest ramifications of the bronchiæ.

It has been, and I believe still is, in a great measure, the common opinion, that the inflammatory affection in croup, is chiefly confined to the trachea and bronchiæ; but Dr. Baillie, as well as Dr. Ceyne, have asserted the contrary, and have given a minute account of several dissections of this disease, wherein the lungs were affected with deep-seated inflammation; and it is obvious from the firmness of these organs, from their not collapsing when the chest was exposed, and from a kind of purulent matter found within their cells.

From the appearances on dissection, and the symptoms which attend the disease, there can be no doubt but that it is an inflammatory affection of the mucous membrane of the trachea, larynx, and other parts immediately connected therewith, attended by a spasmodic contraction of the muscles in consequence thereof; the treatment ought, therefore, to be managed accordingly. Whenever the least change is perceived in the voice of children, although it may be doubtful whether the alteration is or is not the result of a different affection, the most scrupulous attention should be paid to the organs of respiration, that proper means of relief may be adopted without delay. In the first or incipient stage of croup, our best and most strenuous endeavors should be exerted to lessen the increased action which prevails all over the mucous membrane of the trachea, larynx, and bronchiæ.

*Treatment.*—Our chief reliance in the treatment of this malady, is to be placed upon lobelia emetics: diaphoretic powders, or composition, should at the same time be freely given. After a full emesis has been procured, lobelia, in small doses, sufficient to nauseate, should be administered every two hours, in connection with the composition. This course, by tending to equalize circulation, will very materially lower vascular action upon the tracheal surface, before it has continued long

enough to produce any exudation, or effusion of coagulated lymph, or whatever it may be, that constitutes the adventitious membrane. To assist the operation of the emetics, the vapor baths may very advantageously be applied. By promptly resorting to these means, the progress of croup may almost always be averted; whereas, by suffering it to pursue its onward course during the first two or three days, and trusting to some trifling remedies, the practitioner will be constrained to witness the protracted sufferings, if not the loss, of his patient, which promptitude and energy might have prevented.

Scotch snuff, mixed with equal parts of fresh lard and spread upon stiff brown paper, or cotton cloth, has been recommended with marked benefit, as a local application to the neck in this affection.

Such is the celerity of this dangerous disease, we cannot but reiterate the necessity of the most prompt and efficient measures in the outset; and should the disease have progressed beyond its first stages before the patient is seen, and aggravated symptoms are manifest, the strongest preparation of emetic should be freely used; and even by this time the powers of the system may be so far lessened that ten times the quantity of that preparation will be necessary to produce the desired effect. If there is difficulty in giving the vapor bath, the warm bath may be substituted. Evacuations from the bowels should be encouraged by gentle laxatives.

## CYNANCHE LARYNGÆA, OR INFLAMMATION OF THE LARYNX.

CYNANCHE laryngæa is of a local nature, is acute, and of short duration, and affect the mucons membrane of the epiglottis, or rima glottidis, (upper part of the wind-pipe,) or probably, both of these parts, and in which there exists a high degree of inflammatory action, occasioning impeded deglutition, with difficult respiration. It is only of late that this fatal variety of sore throat has attracted the notice of practitioners, having commonly been confounded with croup. In many cases there may, indeed, arise some difficulty of forming a just diagnosis; but the following peculiarities will greatly assist us.

In cynanche laryngæa the symptoms are, an uneasy sensation in the larynx, difficult and painful deglutition, partial swelling of the fauces, a supervening and perpetually increasing difficulty of breathing, nearly amounting to a sense of suffocation, the voice being extremely hoarse, or reduced to a scarcely audible whisper, attended by inflammatory fever. In cynanche trachealis there is a difficulty of respiration without any swelling of the fauces, or painful deglutition; the expiration especially in coughing are very shrill, but the fever in this is also inflammatory.

The usual cause of cynanche laryngæa is exposure to cold, which excites an inflammatory determination to the membrane investing the larynx.



It comes on with chilliness, succeeded by heat and fever, which are soon followed with a hoarseness and indistinctness of voice, laborious respiration and pain, or, as it were, a stricture in the throat threatening suffocation; the pulse is quick and feeble, the eyes are suffused with blood, and somewhat protruding, the countenance has a livid or swollen appearance, the tongue is furred, the tonsils, uvula, and pharynx presenting a dark red appearance on inspection, and any attempt to swallow is succeeded by excruciating pain and difficulty. If the symptoms are not properly attended to, and subdued by an immediate adoption of active and proper means, the patient is destroyed by suffocation.

The morbid appearances to be observed on dissection of those who die of cynanche laryngæa are as follows: the mucous membrane investing the epiglottis and margin of the glottis is inflamed, serum is effused under it, or coagulable lymph on its external surface, by which the rima glottidis is narrowed, or actually closed. Sometimes there has been perceived an accumulation of mucous in the cells of the lungs, with a slight effusion of serum into their reticular texture. In some instances the pleura has been found partially adhered, with more fluid in the cavities than is natural.

*Treatment.*—To control and manage this form of disease with success, a timely and active employment of suitable remedies is obviously necessary; and they, too, must be directed to the cause of the disease as quickly as possible. In the first stage of this disease, nine cases out of ten, may be cured by the administration of a lobelia emetic. But after it has run on for some two or three days, a course of medicine will be actually necessary, and in some instances it will be proper to repeat the course some two or three times.

Emetics are indispensibly necessary in this form of disease, for they not only remove from the stomach the morbid material which it contains, but by their action upon the exhalent vessels of the lungs, they promote expectoration, and, thereby, lessen the inflammation of the mucous membrane, as well as open the pores of the skin. In addition to these means the frequent use of cayenne gargles will afford great relief. If the disease appears obstinate, and increases in violence, laryngotomy affords the only chance of escape from suffocation.

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## CYNANCHE PHARYNGÆA, OR INFLAMMATION OF THE PHARYNX.

This differs from cynanche tonsillaris only in the seat of the inflammation.

It is of the same nature, is produced by the same causes, and requires a similar treatment.

## PLEURITIS, OR PLEURISY.

PLEURISY is an inflammation of the membrane lining and enveloping the lungs attended with an acute pain in the side, impeding respiration, fever, and a full, quick, and hard pulse. In some instances the inflammation is partial, or affects one place in particular, which is commonly on the right side; but in general a morbid affection is communicated throughout its whole extent.

The disease is occasioned by exposure to cold, and by all the causes which usually give rise to other inflammatory complaints; and it attacks chiefly those of a vigorous constitution and plethoric habit. In consequence of the previous inflammation, it is apt, at its departure, to leave behind a thickening of the pleura, or adhesions to the ribs, and intercostal muscles which either lay the foundation of future pneumonic complaints, or render the patient more susceptible of the changes in the state of the atmosphere than before.

It comes on with acute pain in the side, which is much aggravated on making a full inspiration, and is accompanied by flushing in the face, increased heat over the whole body, rigors, difficulty of lying on the side affected, together with a cough and nausea; and the pulse is hard, strong and frequent, and vibrates under the finger when pressed upon, not unlike the tense string of a musical instrument.

If the disease is neglected at its onset, and the inflammation proceeds with great violence and rapidity, the lungs themselves become affected. the passage of the blood through them is stopped, and the patient is suffocated; or, from a combination of the two affections, the inflammation proceeds on to suppuration, and an abscess is formed.

The prognosis in pleurisy must be drawn from the severity of the symptoms. If the fever and inflammation have run high and the pain should cease suddenly, with change of countenance and a sinking of the pulse, great danger may be apprehended; but if the heat and other febrile symptoms abate gradually, if respiration is performed with greater ease and less pain, and a free and copious expectoration ensues, a speedy recovery may be expected. Empyema, or a collection of pus in the cavity of the thorax, is occasionally one of the termination of pleuritis.

The appearances on dissection are much the same as those mentioned under the head of peripneumony; viz. an inflamed state of the pleura, connected with the lungs, having its surface crowded with red vessels, and a layer of coagulated lymph lying upon it; adhesions also of the substance of the lungs to the pleura. Besides these, the lungs themselves are often found in an inflamed state, with an extravasation either of blood or coagulated lymph in their substance. Tubercles and abscesses are likewise frequently met with.

*Treatment.*—In the treatment of this form of disease, our attention must be directed to the removal of the morbid causes; not the pain merely, as the pain is only a necessary evil to point out the seat of the disease: because venesection will very readily remove the pain, we are not to conclude that the disease is removed by any means, or, that it is to be considered under any circumstances a remedy. But on the other hand, we are very certain of the fact, that blood-

letting induces debility and instead of assisting nature in her efforts to remove the causes, it increases the power of the disease, by diminishing the vitality of the system. In the cure of this form of disease, if any method be followed, which does not tend to avert and throw off the morbid matter in nature's own way, that method serves only to increase the disease. Hence, we contend, that a depleting course of treatment is at least imprudent, and very frequently dangerous, believing as we do, that it is in vain to oppose the motions or tendency of nature.

Thorough courses of medicine timely administered will in no case fail to effect a cure. Commence the treatment by first giving the patient several portions of composition tea, or some other diffusible stimulants, then let him be placed over the vapor bath and drink freely the diaphoretic medicine. After he has sweated freely, remove him after rubbing the surface until you have completely dried it, with coarse towels, and let him be placed on the bed, and proceed to give an emetic. After the operation, let the patient take some light nourishment. Composition and the pleurisy root should be enjoined every two hours. And as often as the pain returns repeat the above course. A free expectoration being one mean which nature usually adopts to relieve herself of the morbid cause, it ought, therefore, to be encouraged by every possible method. (See Expectorant Recipes, 2d vol.) Also, mucilaginous and oily drinks frequently throughout the day, are strongly recommended; they sheathe the throat and other parts from the acrimonious mucus which is thrown out, and which provokes frequent fits of coughing.

Throughout the whole course of this disease the patient is to abstain from all spirituous liquors, and let the diet be nourishing but of such food as is easily digested. The bowels must be kept open by enemas and laxative tonics, and the patient avoid all exposure to cold which might bring on a return of this complaint, which is generally attended with worse consequences than the first attack.

## PNEUMONIA, OR PERIPNEUMONY, OR INFLAMMATION OF THE LUNGS.

A PERIPNEUMONY, or inflammation of the lungs, is denoted by a difficulty of breathing, obtuse pain in some part of the chest, cough, a frequent full pulse, vibrating under the finger, like the tense string of a musical instrument, white tongue, high-colored urine, and other symptoms of inflammatory fever. The disease is divided into the true and spurious peripneumony. When it arises from stazy blood obstructing the vessels of the lungs, it is called by the former appellation; and when it proceeds from a thick viscid matter producing a similar effect, it is known by the name of the latter. Pneumonia is sometimes met with, combined with typhus gravior, (*viz.* pneumonia typhodes,) and then appears under a different character from its usual one.

The most general cause of peripneumony is, the application of cold to the body, which gives a check to the perspiration, and determines a great flow of blood to the lungs. It attacks principally those of a robust constitution and plethoric habit; hence it is more frequently met with in men than women, and occurs most frequently in the winter season and spring of the year; but it may arise in either of the other seasons, when there are sudden vicissitudes from heat to cold.

Other causes, such as violent exertions in singing, speaking, or playing on wind instruments, by producing an increased action of the lungs, have been known to occasion peripneumony. Severe exercise, external injuries, a free indulgence in the use of fermented liquors, intemperance, repelled eruptions, suppressed evacuations, and metastasis from other diseases, such as gout, rheumatism, &c., may also give rise to it. Those who have labored under a former attack of this complaint, are much predisposed to returns of it. Pneumonia appears as a symptomatic affection in several diseases, as measles, catarrh, &c.

The true peripneumony comes on with an obtuse pain in the chest or side, great difficulty of breathing (particularly in a recumbent position, or when lying on the side affected,) together with a cough, dryness of the skin, heat, anxiety, flushing of the face, and thirst. The pain is prodigiously increased on coughing or making a full inspiration. At the first commencement of the disease, the pulse is usually full, strong, hard, and frequent; but in an advanced stage it is commonly weak, soft, and often irregular. In the beginning the cough is frequently dry, and without expectoration; but in some cases it is moist even from the first; and the matter spit up is various both in color and consistence, being often streaked with blood, but at which we need not be alarmed.

If relief is not afforded in time, and the inflammation proceeds with such violence as to endanger suffocation, the vessels of the neck will become turgid and swelled; the face will alter to a purple color; an effusion of blood will take place into the cellular substance of the lungs, so as to impede the circulation through that organ, and the patient will soon be deprived of life.

Should these violent symptoms not arise, and the proper means for carrying off the inflammation have either been neglected, or have proved ineffectual, although adopted at an early period of the disease, a supuration may ensue, which event may happen in a few cases during the first week, but more usually in the second, when the disease continues, and is to be known by frequent slight shiverings; by an abatement of the pain, and sense of fullness in the part; by the patient being able to lie with greatest ease on the side which was affected; by a remission of the previous febrile symptoms, and accession of hectic, and by the respiration being less painful but more compressed. When the collection of matter has come to maturity, it sometimes bursts into the air vessels, and occasions instant suffocation; in some cases it will be spit up. I have known patients spit up a considerable quantity in this way. This spitting often continues long, and the person falls into a state similar as in phthisis pulmonalis. Sometimes the collection bursts into the cavity of the thorax and produces empyema—rather a hopeless case. Sometimes lymph is effused into the air-vessels, which, by filling up the cells of the



lungs, produces suffocation; or being effused into the cavity of the chest, gives rise to hydrothorax; at others, adhesions to the ribs are formed.

Tubercles, or a hardened state of the lungs, have been said to occur in consequence of pneumonia, and in some cases it undoubtedly may be so, but not so often, I believe, as has been imagined. In my opinion, they are more frequently the cause of it, having previously existed in a scrofulous habit. In such cases they give great irritation to the lungs, produce dyspnoea, cough, and congestions, and upon the application of any additional stimulus, pneumonia is apt to be induced.

When peripneumonia proves fatal, it is generally by an effusion of blood or lymph into the cellular texture of the lungs, so as to occasion suffocation, which usually happens between the third and seventh day; but it may likewise prove fatal by terminating either in suppuration or gangrene. The latter is a very rare occurrence.

In those cases where it goes off by resolution, some very evident evacuation always attends it, such as a great flow of urine, with a copious sediment; diarrhoea, mild sweats diffused over the whole body, or a hæmorrhage from the nose; but the evacuation which most frequently terminates the complaint, and which does it with the greatest effect, is a free and copious expectoration of a thick, white, or yellow mucus; and by this the disease is carried off in the course of twelve or fourteen days, the pulse gradually abating in its frequency, and the heat of the body, with other febrile symptoms, disappearing. Cases of pneumonia terminating in health without a free expectoration, are very rare.

Our opinion as to the event is to be drawn from the symptoms which are present. A high degree of fever, attended with delirium, much difficulty of breathing, acute pain, a dry cough, or an expectoration of a dark, black color, sudden cessation of pain or of the expectoration, followed by a change or lividness of the lips and of the countenance, and sinking or irregularity of the pulse, denote great danger: on the contrary, an abatement of the febrile symptoms, and of the difficulty of breathing, and pain taking place on the coming on of a free expectoration, or the happening of any other critical evacuation, such as hæmorrhage from the nose, diarrhoea, or free diaphoresis, the urine at the same time depositing a copious sediment, promise fair for the recovery of the patient. When the inflammation terminates either in suppuration, or an effusion of lymph into the cellular substance of the lungs, or cavity of the thorax, it is always to be considered as highly dangerous.

On dissection the lungs usually appear inflamed, and there is often found an extravasation either of blood or of coagulated lymph in their cellular substance. The appearances likewise present themselves in the cavity of the thorax, and within the pericardium. The pleura connected with the lungs, is also in an inflamed state, having its surface every where crowded with red vessels. Besides these, abscesses are frequently found in the substance of the lungs, as likewise tubercles, and adhesions to the ribs are formed. A quantity of purulent matter is often discovered also in the bronchiæ.

*Treatment.*—As in many cases of peripneumony the patient is destroyed in a few days, by the passage of the blood through the lungs being obstructed, effusion takes place, and a hæmorrhage soon ensues,

or the inflammation hurrying rapidly on to a suppuration, the most vigorous treatment ought to be adopted on the very appearance of the disease. The treatment in peripneumony varies very little, if any, from that of pleurisy. It should be more prompt, if possible, and active. Frequent steamings, to equalize the circulation and determine the blood to the surface, with one or two emetics, will generally be sufficient to remove the common forms of this disease. But in severe cases, the treatment must be more energetic; frequent courses, in rapid succession, will be required, with all the auxiliary remedies that can be summoned to the practitioner's aid.

We must rely very much upon expectorants, as they perform a very important part of the cure. They loosen the phlegm, cause the patient to expectorate freely, discharge matter which is the cause of irritation, and which, indeed, is the cause of the local fever, or inflammation. Frequent doses of tincture of lobelia, in small quantities, barely enough to nauseate the stomach, will be found of infinite service in peripneumony. We may safely rely on the above method of curing this distressing form of disease, feeling confident that there is not a single article recommended which does not harmonize with the laws of life.

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## GASTRITIS, OR INFLAMMATION OF THE STOMACH.

THIS disease is divided into two species; the phlegmonous and erysipelatous: but it is the former which is here to be treated of, the latter arising chiefly towards the close of other diseases, marking the certain approach to dissolution, and being unaccompanied with any marks of general inflammation, or by any burning pain in the stomach.

Phlegmonous gastritis is produced by acrid substances of various kinds, such as arsenic, oxymuriate of mercury, alkalies, the oxalic and mineral acids, &c., taken into the stomach, as likewise by food of an improper nature, by potations of spirituous liquors, by taking large draughts of any cold liquor when the body is much heated by exercise, dancing, &c.; by external violence from wounds, blows, &c., and by repelled exanthemata and gout. Besides these, it may arise from an inflammation of some of the neighboring parts, as the liver, intestines, &c., extending to the stomach.

Phlegmonous gastritis is readily to be distinguished from any other disease by the burning pain, heat, and tension in the region of the stomach; by the aggravation of that pain when any thing is swallowed, with the immediate rejection of it; and by the sudden and greater depression of strength in this than in any other inflammation. Indeed enteritis is the only disease it can be confounded with: and from this it may easily be discerned by the seat of pain on pressure with the hand. Gastritis is a rare disorder.

The symptoms which attend it are, a violent burning pain in the region of the stomach, with great soreness, distention, and flatulency, a

severe vomiting, especially after any thing is swallowed, whether it be liquid or solid, most distressing thirst, restlessness, anxiety, and a continual tossing of the body, with great debility, constant watching, delirium, and a quick, hard, and contracted pulse. In some cases a severe purging attends.

If the disease increases in violence, symptoms of irritation then ensue; there is great loss of strength, with faintings, a short and interrupted respiration, cold clammy sweats, hiccoughs, coldness of the extremities, an intermitting pulse, and the patient is soon cut off.

The event of gastritis is seldom looked upon favorably by the faculty, as the person is usually either suddenly destroyed by the violence of the inflammation, or else it terminates quickly in suppuration, ulceration, or gangrene. Perhaps it may sometimes occasion scirrhus of the pylorus.

Its termination in suppuration may be known by the symptoms, although moderate, exceeding the continuance of eight or ten days, and a remission of pain occurring, whilst a sense of weight and anxiety still remain, and on the formation of an abscess, cold shiverings ensue, with marked exacerbations in the evening, which are followed by night-sweats, and other symptoms of hectic fever; and these at length prove fatal, unless the pus is thrown up by vomiting, and the ulcer heals.

Its tendency to gangrene may be dreaded from the violence of its symptoms not yielding to proper remedies early in the disease; and when begun it may be known by the sudden cessation of the pain; by the pulse continuing its frequency, but becoming weaker; and by delirium, with other marks of increasing debility, ensuing.

In consequence of previous inflammation, a scirrhus of the pylorus is sometimes induced, but unfortunately we know of no symptoms which are characteristic of it. Nausea and vomiting soon after taking food, and very obstinate costiveness, are usually present. When it has ulcerated, and formed what is called cancer, there is generally an eructation of very fetid air, and a frequent vomiting of dark-colored mucus, which is offensive. The pain is constant, though varying in degree; it is increased by taking an acrid or acid substance into the stomach; whereas mild fluids, such as milk, gruel, &c., occasion little or no uneasiness; and this circumstance may help to distinguish it from that pain which is occasioned by mere distention, for there the pain equally follows, whatever is the food taken.

Sometimes adhesions are formed between the stomach and neighboring viscera.

Fatal cases of this disease show, on dissection, a considerable redness on the inner coat of the stomach, having a layer of coagulated lymph lining its surface. They likewise exhibit a partial thickening of the substance of the organ at the inflamed part, the inflammation seldom extending over the whole of it. Where ulceration has taken place, the ulcers sometimes are found to penetrate through all its coats, and sometimes only through one or two of them.

*Treatment.*—The extreme irritability of the stomach, in this form of disease, prevents the free use, with any degree of satisfaction, of either food or medicine; the pain is so much increased upon the introduction

of any article, that it is with the utmost difficulty that the patient can be persuaded to swallow any thing, notwithstanding he may be informed of his truly critical situation.

It is necessary in gastritis that the patient should use mucilaginous drinks; slippery elm, particularly, in frequent small draughts, to which may be added a few drops of the tincture of myrrh; and as the stomach will bear it, other mild diluent drinks, such as chicken broth, milk porridge, &c. Mucilaginous drinks are particularly servicable, as they lubricate the parts and allay the irritation.

It is very necessary that the patient should be carried through regular courses of medicine. They should be repeated as often as the urgency of the case may require, perhaps every day, or oftener. In the mean time, the best and least irritating sudorifics should be intermediately advised.

As bleeding, in this form of disease, stands at the head of remediate means in the mineral practice, so must the vapor bath and emetics take the lead in ours. The adoption of the most thorough and efficient coursing cannot be too strenuously insisted upon in the outset of this disease. And this remark will apply in general to all acute local inflammation. The ordinary rule of giving a course to-day, and another day after to-morrow, will not do in gastritis.

As soon as the existence of this form of inflammation is unequivocal, nothing should prevent the most prompt application of the bath, followed by a lobelia emetic. If by this operation we gain a remission of the urgent symptoms, it will seldom be of long duration; and on a recurrence of their exacerbation, a repetition of the treatment will be demanded, even in four or six hours. During the convalescent stage, the utmost care is necessary in regard to food, drinks, &c.

## ENTERITIS, OR INFLAMMATION OF THE INTESTINES.

THIS, as well as gastritis, is of two species, viz: the phlegmonous and erysipelatous; the latter of which, arising only in consequence of some other disease, is not here to be noticed.

Pungent pain in the abdomen, spreading and acute round the umbilicus, nausea, vomiting, obstinate costiveness, and pyrexia, are the characteristics of enteritis.

The only disease with which enteritis can be confounded is colic; but from this it may readily be distinguished, as the former is accompanied with fever, and a quick and hard small pulse, and the pain is increased on pressure, which does not occur in colic.

The causes of enteritis are much the same with those of gastritis, being occasioned by acrid or irritating substances, indurated fæces, acrid bile, long continued and obstinate costiveness, spasmodic colic, intussusception, and a strangulation of any part of the intestinal canal; but another very general cause is atmospherical vicissitude, or the applica-



tion of cold to some part of the skin during or subsequent to a state of perspiration. It is also occasioned by cold drink of any kind taken when the body is heated, in the same way as inflammation of the stomach is apt to arise therefrom.

Enteritis comes on with an acute pain, extending in general over the whole of the abdomen, but more especially round the navel, which is greatly aggravated on pressure: accompanied with eructations, sickness at the stomach, a vomiting of bilious matter, obstinate costiveness, thirst, heat, great anxiety, and a quick and hard small pulse. After a short time the pain becomes more severe, the bowels are affected with slight spasms, the whole region of the abdomen is highly painful to the touch, and seems drawn together in lumpy contraction; invincible costiveness prevails, and the urine is voided with great difficulty and pain.

The inflammation continuing to proceed with violence, terminates at last in ulceration, scirrhus, or gangrene; or it goes off by resolution.

Enteritis is always attended with considerable danger, as it often terminates in gangrene in the space of a few hours from its commencement: this event is marked by a sudden remission of pain, sinking and irregularity of the pulse, shrinking of the features, cold sweats, syncope, suppression of urine, hiccough, and distention of the belly, which sounds on being struck with the finger; and it frequently proves fatal likewise, during the inflammatory stage. If the pains abate gradually, if natural stools be passed, if a universal diaphoresis, attended with a firm equal pulse, comes on, or if a copious discharge of loaded urine, with the same kind of pulse, takes place, a resolution and favorable termination may be expected.

Its termination in ulceration, which is not common, can only be known by the febrile symptoms remitting; by occasional pains and rigors; and by pus being mixed with the evacuations from the bowels.

Dissections of this disease show that the inflammation pervades the intestinal tube to a very considerable extent; that adhesions of the diseased portion to contiguous parts are often formed; and that, in some cases, the intestines are in a gangrenous state, or that ulcerations have formed. They likewise show, that besides obstinate obstructions, intussusception, constrictions, and twistings, are often to be met with; and that in most cases the peritoneum is more or less affected, and is perceived at times to be covered with a layer of coagulable lymph. The mesentery and omentum are also found much inflamed.

*Treatment.*—The cure of enteritis must be on the same general plan as in all forms of disease attended with inflammation, being directed to lessen the impetus of the blood to the part affected and remove the obstruction from the intestines. Enteritis may generally be cured in its inception by one course of medicine simply. But if suffered to run for any length of time, it will certainly require very active treatment to subdue it. It will be very proper to use the vapor bath freely when the disease has been raging for some two or three days, not forgetting to cleanse the stomach and bowels. A clyster composed of bayberry, slippery elm, and golden seal, with one tea-spoonful of No. 6, should be repeated until the proper evacuations are procured. Cathartics should not by any means be administered, as their tendency is to increase the

irritation, and the tone of the bowels is evidently impaired thereby. To assist in relieving the pain and gripes, warm fomentations should be applied to the abdomen. A pepper poultice is particularly serviceable.

As enteritis is very apt to recur from slight cause, the greatest circumspection will be requisite after recovery. Improper food and exposure to cold are therefore cautiously to be avoided, and costiveness to be immediately removed. If there be any appearance of ulceration and supuration, particular attention becomes still more necessary, that the ulcers may have a chance to heal. We enjoin composure and the strictest attention to diet. Every ten hours between the courses, the patient should take in small quantities, lobelia tea conjoined with white root; this may be used with the happiest effect. For a constant drink, sage, pennyroyal, or balm teas with a little No. 6, will be found excellent.

## HEPATITIS, OR INFLAMMATION OF THE LIVER.

PYREXIA, tension, and pain of the right hypocondrium, often pungent, as in pleuritis, but sometimes dull, pain in the clavicle and top of the right shoulder, uneasy lying on the left side, difficult respiration, dry cough and vomiting, are the characteristics of hepatitis: very frequently there is some degree of jaundice.

Hepatitis has generally been considered of two kinds; the one acute, the other chronic; the former showing the essential character of genuine inflammation, the latter exhibiting symptoms of less violence as to their inflammatory tendency, but an enlargement and hardness of the liver, with an obtuse pain.

Besides the causes producing other inflammations, such as the application of cold, external injuries from contusions, blows, &c., this disease may be occasioned by violent exercise, by intense summer heats, by long continued intermittent and remittent fevers, by high living, and an intemperate use of vinous and spirituous liquors, but more particularly the latter, and by various solid concretions in the substance of the liver. In five cases out of six, the exciting cause of acute hepatitis will be found to be the partial application of cold or wet when the body is heated or over-fatigued by violent exercise. Derangement of the digestive organs, suppressed secretions, inflammations, compression, fevers, and mental solicitude, are very general causes of obstructions and diseases of the liver.

In warm climates this viscus is more apt to be affected with inflammation than any other part of the body, probably from the increased secretion of bile which takes place when the blood is thrown on the internal parts by an exposure to cold; or from the bile becoming acrid, and thereby exciting an irritation in the part. An inflammation of the liver, and the diseases consequent thereon, are indeed affections more frequently to be met with in warm climates than in cold ones, particularly in the East and West Indies, where few Europeans can reside for

any length of time without being attacked by them. The liver, in warm climates, seems to be the seat of disease nearly in the same proportion that the lungs are in northern regions. Both acute and chronic hepatitis are frequently met with in persons who come to Europe from the East and West Indies, and in those who have been affected when in those climates they are very apt to recur by the application of causes which would be likely to have a different effect upon any body else.

Between the hepatitis of India and that of Europe, there is no small dissimilarity in the symptoms. The flux, which may be termed the pathognomic of the former, is always wanting in the latter. That of India partakes more of inflammatory congestion and obstruction; the other of active inflammation, and, if not early checked, frequently runs on to suppuration. Such an occurrence in India or the West Indies, is principally met with among those lately arrived from Europe, and may, in most cases, be traced to intemperance, violent exercise in the sun, or sudden exposure to cold when the body has been in a state of considerable perspiration. The hepatitis of India is generally allowed to be, in all similar stages, a milder disease than the sporadic hepatitis of this country, the phlogistic symptoms being less violent.

The acute species of hepatitis comes on with a sense of chilliness preceding pain in the right hypochondrium, sometimes dull, sometimes sharp, extending up to the clavicle and shoulder of that side, most usually, which is much increased by pressing upon the part, and is accompanied with a cough, oppression of breathing, and difficulty of lying, except on the side affected; together with nausea and sickness, and often with a vomiting of bilious matter; the intestines are generally inactive, and the stools show a deficiency of biliary secretion, or at least of any intermixture of it with them; the urine is of a deep saffron color, and small in quantity; there is a loss of appetite, great thirst, and costiveness, with a strong, hard, and frequent pulse, of from 90 to a 100 in a minute, and sometimes intermitting; the skin is hot and dry at the same time, and the tongue covered with a white, and sometimes a yellowish fur; and when the disease has continued for some days, the skin and eyes become tinged of a deep yellow, particularly when the inflammation is produced by calculi in the parenchyma of the liver.

In hepatitis, as well as in other diseases, we do not always find the symptoms of the same degree of violence as they are described in the definition; thus in some cases the fever is severe, in others it is scarcely perceptible: in some instances the pain is very acute and violent; in others, collections of puss have been found after death, when no pain has been felt. When the pain is seated deep in the substance of the liver, as that possesses little sensibility, the pain is usually obtuse; but when the surface is affected, it is acute, and apt to spread to the diaphragm and lungs, producing cough.

Both ancient and modern nosologists have made a distinction between the symptoms that occur when the inflammation occupies the convex surface of the liver, and those that are present when the disease affects the concave. It is said, when great difficulty of breathing, and cough, accompany the pain in the region of the liver, that these symptoms indicate the inflammation to be seated in the superior or convex part; but

where the inflammation occupies the concave or inferior surface, which lies contiguous to the stomach and duodenum, there is more sickness and vomiting; and, moreover, the pain is not so violent in the region of the organ as in the other instance.

It seems probable, says Dr. Cullen, that acute hepatitis is always an affection of the external membrane of the liver, and that the parenchymatic is of the chronic kind.

The chronic species is usually accompanied with a morbid complexion, loss of appetite and flesh, lowness of spirits and despondency of mind, headache, or giddiness, general weakness, a morbid sensibility of the nervous system, costiveness, indigestion, flatulency, acidity, and pains in the stomach, a yellow tinge of the skin and eyes, clay-colored stools, high-colored urine depositing a red sediment and ropy mucus; an obtuse pain in the region of the liver, extending to the shoulder, together with a sense of weight, unusual fulness, and some enlargement and hardness of the organ, and not unfrequently with a slight difficulty of breathing, or dyspnœa. In some cases of chronic inflammation of the liver the pulse has been observed to intermit; and probably induced either by the blood through the hepatic artery being obstructed by the scirrhusity, by an accumulation of it in the branches of the vena portarum, or by bile in the hepatic ducts.

The symptoms are, however, often so mild and insignificant as to pass almost unnoticed, as large abscesses have been found in the liver upon dissection, which in the person's lifetime had created little or no inconvenience, and which we may presume to have been occasioned by some previous inflammation.

We may readily distinguish hepatitis from pneumonia by the pain in the former extending into the shoulder; by the sallowness of the countenance; by the cough being unaccompanied by expectoration, and by the less degree of dyspnœa. The heat and pain not being increased upon taking any thing into the stomach, its being able to retain whatever liquids or medicines are received into it, without the immediate rejection of them, and the less prostration of strength, will distinguish it from gastritis. Hepatitis may be discerned from spasm on the gall-ducts, by their being no nausea, by the pain being permanent, by the pulse being 100 and upwards in a minute, and by the patient always preferring to keep the body in a straight, quiescent posture; whereas the greatest ease, when there is spasm on the gall-ducts, is obtained by bending the body forward on the knees.

Hepatitis, like other inflammations, may end in resolution, suppuration, gangrene, or scirrhus, in which the liver becomes swelled and hard; but its termination in gangrene is a rare occurrence. It is frequently accompanied with chronic obstruction. Its tendency to run into suppuration is not so great in this country as in warm climates. Indeed it is a rare occurrence here. The period of suppuration is influenced by the degree of inflammation, the season of the year, climate, and the remedies that have been employed. Scirrhus may exist in the liver without previous active inflammation, as in those who have long resided in the East or West Indies. Indeed, a scirrhusity of the liver most generally arises from this cause, and by an abuse of ardent spirits.



The disease is seldom attended with fatal consequences of an immediate nature, and is sometimes carried off by a hæmorrhage from the nose or hæmorrhoidal vessels, and likewise by sweating, by a diarrhœa, or by an evacuation of urine depositing a copious sediment. In a few instances it has been observed to cease on the appearance of erysipelas in some external part. Serous effusion in the cavity of the abdomen, is sometimes a consequence of hepatitis showing itself under the form of ascites.

Hydatids, now and then form in or on the liver, and sometimes, acquire so considerable a size and hardness, as to be distinguished with great difficulty from chronic hepatitis terminating in suppuration.

The most favorable signs in hepatitis are, a gradual abatement of the pyrexial symptoms, an improvement in the complexion, the strength not much reduced by the remedies, return of the appetite, and an increase in the bulk of the body. Intensity of pain in the region of the liver, a full and frequent pulse, considerable heat, thirst, dry skin, costiveness, and frequent rigors denote approaching suppuration.

When the inflammation terminates in the formation of matter, the inflammatory symptoms gradually subside and give way to those of suppuration. The fever becomes somewhat intermittent, frequent rigors or shiverings are felt, the sense of weight in the part increases, the pains are less acute but throbbing, the tongue is white, with flushings of the countenance; and when the abscess is formed near the edge of the liver, or towards the concave surface, it not unfrequently projects under the false ribs, so that the fluctuation may be felt externally. If the abscess forms on its convex surface, it points towards the cavity of the thorax, corrodes through the diaphragm, and distends the pleura, which sometimes pushes through the interstices of the ribs. At last the matter finds its way through the intercostal muscles, and may be distinguished through the integuments. If the abscess is apparent, there will be found a fluctuation in the centre, while the circumference remains hard. A change of color in the skin only occurs where a great quantity of matter is accumulated; or where, by its bad quality, it changes the color of the teguments. If much pressure on the tumor with the fingers is employed, a pulsation may often be felt, particularly in irritable habits. Sometimes the inferior lobe of the lungs contracts adhesions with those points of the diaphragm connected with the abscess, by which means the matter will be discharged by the bronchia: this is, however, a rare occurrence, but it often happens that the matter is effused into the cavity of the thorax, and forms a purulent empyema. It likewise happens now and then, that the sides of the abscess, forming adhesions with the stomach, or much oftener with the colon, the matter is discharged into their cavity, and evacuated either by vomiting or stool.

On dissection of those who die of hepatitis, the liver is often found much enlarged and hard to the touch, its color is more of a deep purple than what is natural, and its membranes are more or less affected by inflammation. Dissections likewise show that adhesions to the neighboring parts often take place; that tubercles, as well as vesicular cysts, denominated hydatids, are sometimes found in it; and that large abscesses, containing a considerable quantity of pus, are often formed in its

substance. Biliary calculi are now and then met with. In a few instances, the livers of those who have died of this disease have been found in a putrid state, resembling a honeycomb; but the most common appearance to be observed in those who die of diseased liver is the formation of tubercles in its substance, with an exception to adhesions. The liver has not unfrequently been found after death to be indurated, or otherwise injured, without any marked indication of disease during the life of the patient, excepting dyspepsia or simple indigestion.

What constitutes great difficulty in managing hepatitis is, that in many cases the symptoms which are primary and indicative of inflammatory affection, are but very slightly marked, even when it is in such a degree as to run with readiness into suppuration. The pain in the side is not constant or acute, the patient himself takes little notice of it, seldom mentions it unless asked about it, and when questioned concerning it, he only tells you, perhaps, that he has felt at times slight pains about the pit of the stomach, or in the right side. It is only by observing the secondary symptoms, such as a diarrhœa, or a short dry cough, and pain felt at the top of the shoulder, or that there is a degree of fulness or tenderness on pressing on the organ a little hard, with some yellowness of the eyes and countenance, that the true state and nature of the disorder is to be ascertained in such cases.

The term CHRONIC HEPATITIS is not confined strictly to that state of slow inflammation of the liver which is attended by fever, and which terminates like other inflammations in suppuration, though such a disease exists, and is by no means uncommon; but it is extended in common language so as to include different chronic affections of the liver, which may or may not have their origin in inflammation. It does not appear necessary, with a view to practice, to attempt any minute distinctions between the different chronic diseases of the liver, although, in a pathological point of view, it must certainly be considered a matter of some interest. Were it even possible to ascertain during life the symptoms by which they could be distinguished from each other, it does not appear that we could as yet apply our knowledge to the discrimination of remedies. The appearances which the liver presents in cases of chronic hepatitis are, simple enlargement without alteration of structure, enlargement with increased hardness, or præternatural softness and flaccidity of its substance, a small and contracted state of the gland, an unhealthy mottled aspect of its peritoneal coat, an ash-colored hue of its substance, abscesses, and lastly, various kinds of tubercle. Of all the modifications of chronic disease of the liver, the most important is tubercle.

The symptoms of chronic hepatitis are various, but at the same time in many cases so obscure, that while persons have been suspected of it, whose livers were perfectly sound, others have died, in whom the disease had remained unsuspected during life. The characteristic symptoms of the disease are, a sense of weight, or a dull numb pain in the right side or back, pain at the point of the shoulder, or a sense of heaviness or weariness in the right arm, a sallow countenance, and yellow tinge of the conjunctiva. In some cases, the enlarged liver can be distinctly felt under the finger. The pulse varies in point of frequency, but is feeble and often intermitting; the tongue is permanently loaded,

and the appetite impaired. The urine frequently deposits a pink sediment. Venous hemorrhages take place from the stomach and intestines, referable probably to the difficulty which the blood finds in passing through the vena portæ. For the same reason the external veins of the abdomen appear swollen. Pimples break out on the nose and forehead, and the face acquires a bloated appearance. Extreme languor, dejection of spirits, and sleeplessness are often noticed. Dyspepsia and atrophy are also prominent symptoms.

The observations already made on the causes of acute hepatitis apply equally to this form of the affection. It is sometimes the *result* of acute inflammation, but it sometimes also precedes that state of disease. Enlargements of the liver have been the consequence of long continued intermittents. Chronic hepatitis may last a long time; but in most cases it sooner or later ends in dropsy, which proves fatal. The prognosis, therefore, should always be guarded, particularly in elderly subjects. The probability of success in the treatment of the disease will depend partly on the state of the constitution, and partly on the extent of morbid alteration which the *structure* of the liver has undergone.

*Treatment.*—The most important means of relief are comprised in regular Thomsonian courses of medicine. Diaphoretics should certainly form a part of the curative process, and they combine admirably with the principal part of our alteratives. Ascidulated drinks should be taken in small quantities, and the diet to consist chiefly of light, farinaceous food, with the chamber well ventilated.

If from sudden shiverings and remission of the quickened pulse, we have reason to believe suppuration has taken place, the very best plan which can be pursued is, to have the patient make use of columbo, golden-seal, poplar bark equal parts, and a half part of seed of lobelia every four hours; this should be given freely whether the abscess be likely to burst externally or internally; if the former, the directions should be encouraged by common Thomsonian poultices, liniments, &c., and the abscess be opened as speedily as possible. However, it is not always attended with bad consequences, if it is neglected, but from the fact that a very great amount of pain may be obviated, as well as danger. We certainly should recommend the opening of them in all cases.

The bowels in this form of disease are generally costive and the stools often of a clay color, though not always. In costiveness the bitter root must be used. "This root," says Dr. Thomson, "is very bitter, and is one of the greatest correctors of the bile I know of, and is an excellent medicine to remove costiveness, as it will cause the bowels to move in a natural manner." The manner of using it, is half a tea-spoonful of the pulverized root in cold water, conjoined with the same quantity of cayenne to make it somewhat active.

In all cases where the liver is torpid, debilitated and irritable, the cure must depend upon our ability to give it fresh tone and vigor. A pill made after the following formula is favorably recommended in this complaint. Equal parts of golden seal, poplar, columbo, bitter root, cayenne, and lobelia seed, prepared by mixing the whole with a sufficient quantity of slippery elm, to be taken three times a day, and particularly on going to bed. The tincture of the extract of dandelion

will be found often highly serviceable. The above treatment must be continued as long as there is pain, bearing in mind that the patient is not always cured when the pain ceases to be felt; the deceitful remissions which sometimes occur in the progress of the cure must not throw the practitioner off his guard, but on the first return of it the same remedies must be again resorted to.

When assistance has not been procured in due time, or the means which have been employed to carry off the inflammation in the liver have not been attended with the desired effect, and a suppuration has ensued, we must endeavor to promote the formation of proper pus, and the discharge of the abscess externally.

To effect this intention, the patient should be put upon the best tonic courses, using at the same time a generous nutritive diet, with a moderate quantity of wine, which course ought to be continued until the suppuration is completed; and to promote the second intention, a large emollient poultice should be kept constantly over the part, well fomenting it twice a-day, previous to the application thereof, or the local bath might be of still greater service. When the tumor points outwardly, and has become somewhat soft, with evident fluctuation, we should immediately open it in the most dependent part, taking care not to touch its adhesion with the corresponding portion of the peritoncum. The opening may be made through the internal integuments with a scalpel, and on reaching the abscess it may either be touched with a lancet, or be peircd with a trocar, which ever may be the preferable way, as we shall thereby have it in our power to evacuate the matter slowly and gradually, which, in large collections, is a point of importance, and therefore deserving of attention. The fluid discharged is most commonly of a grayish color, but not invariably so. To facilitate the discharge of the matter, the patient ought to be placed in the most favorable position, and the belly be gradually compressed by means of a proper bandage. The dressings ought to be simple and frequently renewed. Should the lips of the wound, after some days, seem disposed to close before the healing of the interior parts, a tent of soft lint, dipped in some digestive ointment, may be inserted into them. To the end of the cure, cinchona with stomatic bitters, wine and a generous diet, will be proper. Suppuration of the liver is a disease of such frequent occurrence in the East Indies and other warm climates, that the practitioners there are become very expert at this operation, and frequently perform it with safety when the tumor does not appear at all, judging merely by the preceding progress of the case, and the degree of fulness in the hypochondrium.

Abscesses in the liver sooner heal when opened than similar affections in other parts of the body, and perhaps with less inconvenience; and, therefore, whenever we have good grounds for suspecting that matter has formed in this viscus, we may advise an opening to be made into the abscess, whether situated on the convex part of it or not, in preference to suffering it to break internally, by which its contents must be evacuated into the abdomen, to the almost certain destruction of the patient.

Should the abscess discharge itself into the cavity of the chest, and so form purulent empyema, the proper operation ought to be performed without any loss of time.



## SPLENITIS, OR INFLAMMATION OF THE SPLEEN.

This disease comes on with rigors, succeeded by heat, thirst, and other febrile symptoms; there is an anxiety and straitness in the præcordium, with difficult respiration, often conjoined with a cough without expectoration. The patient complains also of external heat, tension, pains in the left side, which sometimes extend through the whole region of the abdomen, or shoot through the diaphragm, and into the left shoulder. The pains are increased on pressure, and are pulsatory, pungent, and burning in various degrees. The pulse on the left side is sometimes partially suppressed, often intermittent, weak, and not quick. There is lassitude and loss of strength, watchfulness, and sometimes delirium; dyspepsia, anorexia, vomiting of green bilious matter, and sometimes difficulty of urine, from an affection of the kidney or bladder; swelling in the region affected, representing the form of the spleen, faintings, and bleeding from the nostrils at the height of the disease: but the most remarkable symptom which attends, is the bloody vomiting, which most authors have considered as peculiar, and have designated by various names. By the ancients it was termed *atri bilis*. At the commencement, the intestines are rather confined, but they soon become relaxed, and emit substances somewhat colored by black blood.

Like the liver, the spleen is often attacked with chronic inflammation, and in time becomes enlarged and indurated. Sometimes suppuration ensues, and forms an abscess.

The causes of the disease are most generally the same with those of other inflammatory diseases; but enlargements of the spleen are frequently the consequence of long-continued intermittents; and these, as well as indurations of the liver, are called *ague-cakes*. They arise, no doubt, from too great a determination of blood to the viscera during the several attacks of the cold fits.

With respect to the prognosis in splenitis, it need only be observed, that, like other inflammations, it may terminate either in resolution, suppuration, or scirrhus. Sometimes it is carried off by a vomiting of dark-colored matter, resembling coffee-ground; sometimes by a diarrhœa, and sometimes by a hæmorrhage from the hæmorrhoidal vessels. The vomiting of grumous matter is, under common circumstances, to be considered a favorable and critical evacuation, yet it sometimes proceeds to a fatal excess. Where splenitis terminates in suppuration, and the contents of the abscess are evacuated in the cavity of the abdomen, the event may prove fatal sooner or later; but a simple enlargement of the spleen is often supported for many years, without any very great inconvenience or hazard to the patient.

Dissections of dead bodies show that the spleen is inflamed and sometimes gangrenous, and that the surrounding viscera partake of the inflammation: occasionally an abscess is formed.

The conclusions which have been drawn from a multitude of pathological as well as anatomical facts are, that the spleen is an organ peculiar to red-blooded animals; that it is of great importance in preparing and mixing the blood; and that its action is of great consequence to the liver.

*Treatment.*—The treatment in splenitis needs very slight variation from that recommended in Hepatitis, as the progress and terminations of the diseases are not materially different. If the inflammation should terminate in suppuration, the abscess is to be encouraged to discharge its contents externally, by fomentations and poultices. Where its termination is enlargement and induration, or scirrhus, we must apply liniments and rubefacients, with other deobstruents, for the purpose of removing the obstruction. Perhaps the third preparation of lobelia will be as servicable as any one article; a linen cloth may be placed over the spleen, kept wetted constantly with this article. And particularly have the region over the spleen bathed well with third preparation, or cayenne and vinegar, while the patient is over the vapor bath.

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## NEPHRITIS, OR INFLAMMATION OF THE KIDNEYS.

NEPHRITIS, properly considered, appears to be of two kinds; the one arising from the general causes of inflammation, and being seated principally in the external membrane of the kidney; the other occasioned by the stimulus of gravel or a stone in the pelvis of it, and the inflammation occupying the interior parts. It is, however, only the first of these that we mean here to investigate, the other will be noticed under the head of Calculus.

This species of inflammation may be distinguished from the cholic, by the pain being seated very far back, and by the urine being of a deep red color, voided frequently, and in small quantity at a time; and it may be known from rheumatism, as in nephritis the pain is not much increased by the motion of the body.

It is to be distinguished from a calculus in the kidney or ureter, by the symptoms of fever accompanying or immediately following the attack of pain, and these continuing without any remarkable intermission; whereas, in a calculus of the kidney or ureter, they do not occur until a considerable time after a violent pain has been felt. In the latter case, too, a numbness of the thigh, and a retraction of the testicle, on the affected side, usually take place, together with a constant nausea and vomiting.

Nephritis is to be distinguished from lumbago by the seat of the complaint, discovered upon pressure; by the dysuria and micturition, by its being frequently attended with vomiting, and by the pain extending along the course of the ureter, and not being much increased on motion, or by an erect posture.

The causes which give rise to this species of nephritis are, external contusions, strains of the back, acrids conveyed to the kidneys in the course of the circulation, violent and severe exercise either in riding or walking, exposure to cold, and sand or stone in the kidney. In some habits there is an evident predisposition to this complaint, particularly the gouty; and in these there are often translations of the disease to the

kidneys, which very much imitate nephritis. In plethoric and inflammatory habits, an immoderate use of spirituous liquors may give rise to nephritis.

An inflammation of the kidney is attended with a sharp pain on the affected side, extending along the course of the ureter; and there is a frequent desire to make urine, with much difficulty in passing it; the patient feels great uneasiness when he endeavors to walk or sit upright; he lies with the most ease on the affected side, and is incommoded with nausea and vomiting, and there are often costiveness and cholic pains.

In forming an opinion as to the event, we are to draw our conclusion from the severity of the symptoms, and from the quantity and appearance of urine which is voided. When the disease is protracted beyond the seventh or eighth day, and the patient feels an obtuse pain in the part, has frequent returns of chilliness and shiverings, there is reason to apprehend that matter is forming in the kidney, and that suppuration will ensue. Remission of pain, fever, and tension, followed by a copious secretion of high-colored mucous urine, universal diaphoresis, or a flow of blood from the hemorrhoidal veins, are favorable symptoms.

The terminations of nephritis are of the same nature as other inflammations. In slight and favorable cases, resolution may be obtained; but where the disease has continued with considerable violence for upwards of a week, suppuration may be apprehended. It may happen, however, that when the disease has been kept down by proper remedies, resolution may take place as late as the fourteenth day. It is marked by the disappearance of the fever and all the symptoms. Suppuration is marked by a remission of the pain, with rigors, throbbings, and hectic fever: in some cases, pus is discharged with the urine.

Nephritis has been known to terminate in gangrene; but this is very rare. The occurrence is characterized by a sudden cessation of the pain after it had long resisted every remedy; with sinking of the pulse, cold sweats, &c., as in other cases of gangrene.

Another termination of the disease is scirrhus, or enlargement and hardening of the kidney. Sometimes nephritis gives rise to gravelish complaints, probably from extravasated blood, or lumps forming a calculus.

Dissections of nephritis show the usual effects of inflammation on the kidney, and they likewise often discover the formation of abscesses which have destroyed its whole substance. In a few instances the kidney has been found in a scirrhus state, and prodigiously enlarged; in other ways nearly wasted away.

A predisposition to ulcerated kidney, and generally to disease of the urinary system, is given by the decline of life. A very large proportion of old people suffer under some morbid affection of these organs. In one it takes the form of calculus, in another of diseased prostate, in a third, of irritable bladder, in a fourth, of chronic inflammation and abscess of the kidney.

The researches of pathologists, and particularly of Dr. Cheston, have proved the dependence, in many cases, of abscess of the kidney upon the presence of a stone in the bladder. Dr. Cheston adds that the sympathy is mutual, and that abscess in the kidney leads, in its turn, to diseased and irritable bladder.

The complete destruction of one kidney is not necessarily fatal. Where the constitution is sound, the other kidney has sometimes enlarged so as to do the office of both, and life has been preserved, and even rendered comfortable, under such circumstances. Occasionally a true *scirrhus* enlargement of the kidney takes place; and though instances are not wanting of such a disease remaining unsuspected during life, yet in most cases, it is attended with the voiding of bloody urine, a constant pain in the loins aggravated by the slightest motion, and a lingering death.

*Treatment.*—In attempting a cure of nephritis, we should commence by emptying the intestines, by gentle aperients, employed as frequently as the occasion may require, in addition to emollient clysters, as constipation is to be guarded against; and then oleaginous or mucilaginous emulsions, with small doses of Canada Balsam, may be given. As a difficulty in making water is one of the symptoms attendant on this form of disease, the above will tend greatly to obviate it. The vapor bath will prove of infinite value in taking off the arterial action that maintains the inflammation, and at the same time in augmenting the urinary secretions. The loins should, at the same time, be covered with a large flannel, wrung out in warm water, or a large poultice made of corn meal, slippery elm, and ginger, may be applied; copious injections of raspberry-leaf tea and lobelia, should be thrown up the rectum, and suffered to remain there as long as the patient is able to retain them.

A decoction of the dried leaves of the peach tree, prepared and drank in the quantity of a pint a day, has been found a very useful remedy in many cases of nephritis.

One of the very best medicines which can be used in nephritis is the *nva ursi*, given in wine glass doses every three hours. We have often tried it, and, in general, with a very happy effect. When it arises from stone or a large peice of gravel lodged in the kidney, we should have recourse to anodynes, in considerable doses.

Those who are liable to frequent returns of this form of disease, or to obstructions in the kidneys, ought carefully to avoid getting wet, as likewise all exposure to cold. It is also recommended that they should lay aside the comfortable feather bed, and in its stead lie on a mattress. Exercise should be moderate, and they should use no kind of spirituous liquors. Diaphoretics should be constantly given, in which a small quantity of brown lobelia is to be added, that a due action upon the vascular system may be maintained.

## CYSTITIS, OR INFLAMMATION OF THE BLADDER.

THE bladder is often irritated and inflamed by viscid substances that pass into the circulation, and particularly by cantharides, ardent spirits, and terebinthine essences or balsams. Idiopathic inflammation is not a frequent disease; yet it occasionally occurs as the bladder is subject to



the common causes of inflammatory affection : and it takes place both in its exterior coat and internal mucous membrane.

If the lower part of the bladder be chiefly affected, the pain will extend to, and take the course of the perineum. If the seat be in the neck of the organ, there will be a retention of urine, with a constant urgency to evacuate ; if in the fundus, the urine will flow stillatitiously, and without ceasing ; the bladder will give a feeling of being constantly full ; and the patient will be perpetually and fruitlessly striving to empty it. In this affection there is usually great restlessness and anxiety, with cold extremities, vomiting, delirium, and other marks of great general irritation. The disease runs its course with rapidity, and subsides, or destroys the patient in a few days.

It terminates, like all other inflammations, most favorably by resolution. But if this do not take place, it passes on to suppuration or gangrene ; the diagnostics of both of which are those already noticed in the preceding species. If suppuration take place, the pus may be discharged by the urethra, which is its happiest outlet ; or it may follow the course of the ulceration, and be emptied into the cavity of the abdomen ; or, if adhesions have been formed with the subjacent cellular membrane, it may work its way in a simons direction and find an opening in some part of the perinaeum. Of the last two terminations the first is almost always fatal ; and the second is extremely troublesome and tedious, though a cure is usually effected at last.

*Treatment.*—The treatment advised in nephritis, or in ischuria and dysuria, to which we refer the reader, will be proper here, except the fomentations and poultices, which should be placed upon the abdomen instead of the loins. And we advise the use of rattle root and other detergent medicines, such as Canada balsam, &c., conjoined with a tea made of elivers. Warm flannel must be kept constantly over the pubes. When the urine is suppressed it must be cautiously evacuated by a catheter, if other means fail to produce relief.

## PERITONITIS, OR INFLAMMATION OF THE PERITONEUM.

It is singular that Dr. Cullen, after distinctly characterising this species in his Nosology, and following it up into three subdivisions, each of which, with him, forms a separate species, as the general disease does a genus, should take no other notice of the entire complaint in any form, except what is expressed in the following laconic remark : “ Among the inflammations of the abdominal region, I have given a place in our Nosology to the peritonitis ; comprehending under that title, not only the inflammations affecting the peritoneum lining the cavity of the abdomen, but also those affecting the extensions of this membrane in the omentum and mesentery. It is not, however, proposed to treat of them here, because it is very difficult to say by what symptoms they are al-

ways to be known; and further, because when known, they do not require any remedies besides those of inflammation in general."

This remark is by far too sweeping. If the diseases referred to have no specific symptoms by which they can be known, they have no more claim to be admitted into a system of symptomatic nosology than into a treatise of practice. Dr. Cullen is right in assigning them a place in the former; and he is, therefore, necessarily wrong in banishing them from the latter; and the more so, as the treatment ought in some degree to vary from that of enteritis, to which his general observation seems chiefly to refer.

THE TRUE PERITONITIS occurs as a symptom in PUERPERAL FEVER, and as we have treated of it at some length under that disease, it is the less necessary to be minute in our account at present. Puerperal fever, indeed, is sometimes, though not quite correctly, made a variety of PERITONITIS: for it is a disease of a peculiar kind, produced by peculiar causes, and is only connected with peritonitis as the latter enters as a symptom into its general character. In what light Dr. Cullen regarded puerperal fever, does not appear from his writings, since, common as the complaint is, it does not occur in any of them; which is the more extraordinary as his System of Nosology, which is not comprehensive enough to include many diseases, might easily have found a place for this.

In the specific definition it is stated, that peritonitis occurs "with little affection of the subjacent viscera or abdominal walls." In effect it often happens that these are not at all influenced, and whenever they are, it is only secondarily. "If the peritoneum," says Mr. Hunter, "which lines the cavity of the abdomen, inflames, its inflammation does not affect the parietes of the abdomen; or if the peritoneum covering any of the viscera is inflamed, it does not affect the viscera. Thus, the peritoneum shall be universally inflamed as in puerperal fever, yet the parietes of the abdomen, and the proper coats of the intestines, shall not be affected: on the other hand, if the parietes of the abdomen, or the proper coats of the intestines are inflamed, the peritoneum shall not be affected."

We hence perceive another proof that the membranous tunics of the different viscera do not hold an equal intimacy of action in every instance. And it would be interesting to follow up the discrepancy, and draw a scale of their readiness or inaptitude to sympathize with the viscera which they cover. The membranes of the brain, as we have already seen, are so peculiarly disposed to partake of the inflammatory action of the parenchyma, as to render solitary inflammation of the one or the other a rare occurrence. In the lungs the play of relationship is far less conspicuous, and in the viscera of the abdomen it rarely takes place. And it is owing to this circumstance that we are able so generally to draw the line between inflammation of the peritoneum and of the intestines, from the pain being much more superficial in the former than in the latter case, and, in many instances, not accompanied with sickness or any other disturbance of the alvine canal.

The causes are those of inflammation in general, as cold, external injuries, and a morbid transfer of action; and, in a few cases, sympathy with the adjoining organs, as in puerperal fever.

When the INFLAMMATION commences or is seated in the OMENTUM or EPIPLON, the pain is more limited, and points rather towards the superior and middle region of the abdomen, a little above the navel; though it sometimes inclines to the right or left hypochondrium. The peritoneum itself does not readily pass into a secretion of genuine pus; and still less so the omentum, which where ulceration takes place, generally evinces a foul and sanious secretion. Sauvages gives a striking example of this in a woman, who was at first attacked with an acute lancinating pain in the umbilical region and had a tumor formed towards the right hypochondrium about the size of a man's fist, which by degrees occupied the whole abdomen. By an application of emollient cataplasms, the pain and general swelling were diminished in the course of three days; but a fluctuation in the abdomen was next detected, like that of an ascites: in consequence of which, a trochar was introduced into both sides of the abdomen, and a putrid ichorous fluid was discharged which induced the operator to enlarge the opening; when sloughs of the omentum already separated came away with an intolerable stench, and with about two pounds of what Sauvages calls ichorous water. But the skill of the surgeon was overpowered by the disease, and the patient fell a victim to it.

The mesentery has but a small degree of sensibility, and hence, as well as from the greater depth of the seat of the disease, MESENTERIC INFLAMMATION is only discoverable by pressure. If the affection be strictly mesenteric, the symptoms are mild and gentle; but this is a rare case, and chiefly occurs when the glands are obstructed, and any accidental irritation is applied to them. Most commonly it is catenated with inflammation of the spleen, liver, or intestines.

*Treatment.*—In true peritonitis the treatment is precisely the same as in enteritis, and when the inflammation is seated in the omentum, the medical treatment is to be conducted upon the same general plan as in hepatitis or splenitis.

## PADAGRA, OR GOUT.

HEREDITARY, arising without an apparent external cause, but preceded generally by an unusual affection of the stomach, pyrexia, pain at a joint, particularly at the great toe, infesting the articulations of the feet and hands, alternating at intervals, and often alternating with affections of the stomach or other internal parts, are assigned by Dr. Cullen, as the characteristics of gout.

A morbid action of a peculiar specific nature seems to take place in this form of disease. Of the gout there are four species, or varieties, the regular, atonic, misplaced, and retrocedent.

The only disorder for which gout can possibly be mistaken, is rheumatism; and cases may occur wherein there may be some difficulty in making a just discrimination; but the most certain way of distinguishing them, will be to give due consideration to the predisposition in the habits,

and symptoms which have preceded, the parts affected, the recurrence of the disease and its connections with other parts of the system; which circumstances are usually different in the two forms of disease.

In the gout the pains generally attack the small joints, and are at the same time less inclined to shift; but when they do, they usually seize the corresponding limb, or some of the viscera; the parts are more red and swollen than in rheumatism, and the dyspeptic symptoms, which rarely precede rheumatism, are present in a considerable degree for some days prior to the taking place of a fit of the gout.

Rheumatism and gout are, however, sometimes combined; in which cases, a diagnosis is neither necessary nor possible.

The attacks of gout are chiefly in the spring of the year, and the beginning of winter, and the disease seldom appears at an earlier period of life than from five-and-thirty to forty. When it does, it may be presumed to arise in general from an hereditary predisposition, susceptibility, or constitutional bias.

Gout chiefly attacks men, and particularly those who live well and lead a sedentary life; those who are addicted to literary pursuits; those who keep late hours, or are in the decline of life: but we meet with it now and then in females of a full and robust habit of body. Men who are employed in constant bodily labor, or who live much upon vegetable food, as well as those who make use of wine and other fermented liquors very sparingly are not often afflicted with the gout. Eunuchs are seldom attacked by it.

The exciting causes of the gout may be divided into those which induce a plethoric state of the body, and those which occasion weakness of the body in general, or of the stomach in particular. Among the latter may be enumerated intemperance of every kind, late hours, intense application to study, long want of rest, much grief or anxiety of mind, great sensuality, long continued fatigue, exposure to cold, particularly by getting wet in the feet, too free a use of acidulated liquours, a sudden change from a full to a spare diet, excessive evacuations, accumulated acidity in the primæ viæ, violent passions of the mind, &c. A full diet of animal food, ragouts, and rich sauces, with a free use of fermented liquors, such as beer, ale, porter, and wine, together with indolence and inactivity, are the causes which give rise to corpulency and a full habit of body; hence the frequency of gout among the rich.

Dr. Darwin mentions, it is a common opinion that this disease is as frequently owing to gluttony in eating, as to intemperance in drinking fermented or spirituous liquors; but that he has never seen any person afflicted with the gout who has not drank freely of fermented liquors, as beer or wine; though as the disposition to all the diseases which have originated from intoxication is in some degree hereditary, a less quantity of spirituous potation will induce the gout in those who inherit the disposition of constitutional bias from their parents.

A fit of the gout is sometimes brought on by severe exercise or walking far, and sometimes by a sprain; and that the disease occasionally takes place from an hereditary predisposition or susceptibility is beyond doubt, as youths of a tender age, and females who have been remarked for their abstemiousness, have been attacked with it.



A predisposition to become affected with this and some other diseases, particularly scrofula and mania, on the application of exciting causes, does certainly exist in the human race. In some instances it is more strongly marked than in others, but predisposition of itself may be inert and insufficient to produce disease: it requires for this purpose the application of an exciting cause. Such is the light in which we should view what are termed hereditary predisposition and hereditary disease.

A peculiar saline acrimony existing in the blood, in such a proportion as to irritate and excite to morbid action the minute termination of the arteries in certain parts of the body, has been assigned by some physicians as the proximate cause of gout. Dr. Cullen supposed it to be a loss of tone in the extremities of the system, while it is in a vigorous and plethoric state, and the energy of the brain still retains its vigor. Dr. Darwin thought that it arises from the defective irritation of some part of the system, the consequence of which is torpor and inflammation.

The opinion most generally entertained by modern physicians is, that the gout proceeds from an accumulation of humors in the relaxed vessels of the ligaments and tendons of the joints; but concerning the nature of those humors, different opinions are entertained, some looking on them as a morbid secretion, and others considering them to be mere blood.

The gout has appeared in some instances to be under the influence of the imagination; for terror suddenly excited, such as by the house of the patient taking fire, has been known in a few minutes to restore the use of his limbs, and admit of his escape with great ease.

A paroxysm of regular gout sometimes comes on suddenly, without any warning; at other times it is preceded by an unusual coldness of the feet and legs, a suppression of perspiration in them, and numbness; or by a sense of pricking along the whole of the lower extremities; and with these symptoms the appetite is diminished, the stomach is troubled with flatulency and indigestion, a degree of torpor or languor is felt over the whole body, great lassitude and fatigue are experienced after the least exercise, the body is costive and the urine pallid. Some previous affection of the stomach or dyspepsia is almost constantly met with.

On the night of the attack the patient perhaps goes to bed in tolerable health, and after a few hours is awaked by the severity of the pain, which has affected either the joint of the great toe, the heel, calf of the leg, or, perhaps, the whole of the foot; and this becoming at length still more violent, is succeeded by rigors and other febrile symptoms, together with a severe throbbing and inflammation in the part. Sometimes both feet become swelled and inflamed, so that neither of them can be put to the ground, nor can the patient endure the least motion without suffering excruciating pain.

Towards morning he falls asleep, and a gentle sweat breaks out, and terminates the paroxysm, a number of which constitutes what is called a fit of the gout, the duration of which will be longer or shorter, according to the disposition of the body to the disease, the season of the year, and the age and strength of the patient.

When the paroxysm has thus taken place, although there is an allevi-

ation of pain at the expiration of some hours, still the patient is not entirely relieved from it, and for some evenings successively he has a return of both pain and fever, which continue with more or less violence until morning.

In time the paroxysms, however, prove more mild every day, till at length the disease goes off either by perspiration, increased flow of urine, or some other evacuation; the parts which have been affected becoming itchy, the cuticle falling off in scales from them, and some slight degree of lameness remaining.

At first an attack of gout occurs perhaps only once in two or three years; it then probably comes on every year, and at length it becomes more frequent, and is more severe and of longer duration each succeeding fit.

It may be stated that gout, with little exception, acquires strength with each returning fit, both as to the number of parts which it attacks, and as to the duration and degree of suffering; and it does not, like some chronic diseases, wear itself out by repetition, and yield to the power of time. A premature old age comes on, and together with painful and crippled limbs, the nervous system is so enfeebled, that both mind and body become less equal to sustain the conflict.

In the progress of the disease various parts of the body are affected, and translations take place from one joint or limb to another; and after frequent attacks, the joints lose their strength and flexibility, and become so stiff as to be deprived of all motion. In some instances little swellings, of a very hard nature, arise in the joints of the fingers, to which a late writer has applied the title of *nodosities*. Nephritic affections of the kidneys arise also, calculi are produced, and concretions, of a chalky nature, are formed upon some of the joints, particularly on those of the fingers, owing to a deposit of the same kind of matter in them. The fluid which is so effused, is at first white; by degrees the watery and serous particles are absorbed, leaving a substance which is soft and clayey, and that afterwards becomes hard and friable, and when put into acids is perfectly soluble.

This effusion occurs not only during fits of gout, but likewise in the intervals; and as the extremities, particularly the hands and feet, are the principal seat of gout, it is there that the greatest accumulations of chalk take place. Though this process is usually preceded by, and accompanied with inflammation, the chalk is never enclosed in a cyst, like pus in an abscess. It is usually in the cellular membrane, in the *bursæ mucosæ*, or in the cavities of the joints.

The chalky liquid, when first secreted, gives to the finger, upon pressure with it, the feeling of a fluctuation, and cannot be distinguished from the ordinary serous effusion of gout; but unfortunately the absorbents do not take up the chalky particles. The consistence of the liquid, therefore, becomes thicker and thicker, till at last nothing remains but a hard mass. It requires, however, repeated effusions to form any gouty mass of chalk, and the consistence will depend upon its age and the activity of the absorbents. By repeated paroxysms, the quantity at last accumulated becomes considerable, and seriously augments the sufferings of the patient; by its bulk greatly distends the surrounding parts

and obstructs the motion of the tendons and joints, often occasioning a complete ankylosis. The entis, when distended to the utmost by frequent deposits of chalk, sometimes gives way, and an opening is formed, through which a quantity of it is evacuated.

It sometimes happens, that although a gouty diathesis prevails in the system, yet from certain causes no inflammatory affection of the joints is produced; in which case the stomach becomes particularly affected, and the patient is troubled with flatulency, indigestion, violent pain, loss of appetite, eructations, nausea, vomiting, and a peculiar sense of cold in the epigastric region; and these affections are often accompanied with much dejection of spirits, and other hypochondriacal symptoms. In some cases the head is affected with pains and giddiness, and now and then with a tendency to apoplexy; and in other cases the viscera of the thorax suffer from the disease, and palpitations, faintings, cramps, and asthma arise. This is what is called atonic gout.

It likewise happens sometimes, that after the inflammation has occupied a joint, instead of its continuing the usual time, and so going off gradually, it ceases suddenly, and is translated to some internal part. The term of retrocedent gout is applied to occurrences of this nature. When it falls on the stomach it occasions nausea, vomiting, anxiety, or great pain, with a sensation of coldness in the epigastric region; when on the heart, it brings on syncope; when on the lungs, it produces an affection resembling asthma; and when it occupies the head, it is apt to give rise to apoplexy or palsy.

In retrocedent or repelled gout, we generally find the disease on the stomach producing violent pain, sickness, vomiting, &c., and patients have died in a few minutes, after such an attack: indeed the symptoms are so violent, that they generally think themselves dying. It seems closely connected with a spasmodic affection of the stomach.

A third species of irregular gout is the misplaced; which implies where the gouty diathesis, instead of producing the inflammatory affections of the joints, occasions an inflammatory affection of some internal part, and which appears with the same symptoms that attend inflammations of those parts from other causes.

All occurrences of this nature, as well as of the two former, are to be regarded as attacks of irregular gout, and are to be guarded against as much as possible. Cases of misplaced gout are not very frequent.

The prognosis in gout may be considered as favorable when the visceral organs are sound in structure, and not materially disturbed in their functions; when the tongue becomes moist and clean; where there is a return of the natural appetite; the faeces recovering a healthy appearance; the urine ceasing to deposit sediment, and at the same time losing its high specific gravity; when the nervous system becomes tranquil, and when the local sensations readily yield in their severity to remedies; the local inflammation soon abating, and not showing a disposition to quick transference from one part to another; or, if it be fugitive, not fixing severally on new parts. In a regular fit of the gout there is seldom any great danger; it is only where the disease appears under an irregular or repelled form that danger arises, and in which either the stomach, heart, lungs, or head become affected. A quick transference

of severe inflammation from one part to another, joined with painful sympathy of the stomach, or the head, or with exquisite sensibility of the whole nervous system, are to be considered among the unfavorable signs in gout. In some cases the whole system becomes weak and languid, dyspepsia and syncope supervene, and the disease at last terminates in palsy, asthma, or dropsy, appearing most commonly in the form of hydrothorax.

In youth the disease admits more readily of alleviation than in an advanced period of life; and its attacks may be rendered milder when acquired, than when it proceeds from an hereditary predisposition: moreover, the fit is generally shorter in proportion to the violence of the febrile symptoms and the length of intermission.

When the constitution has suffered great ravages from frequent and severe attacks of the gout, various morbid affections of the viscera are to be observed on dissection; calculi of different sizes and color are to be found in the kidneys; and on examining the joints which have been rendered stiff and immovable, it appears as if their motion had been destroyed by the formation of chalky concretions of a similar nature with those lodged in the kidneys. These calculous concretions, or chalk-stones, as they are called, are supposed to be the consequence of local diseased action, and not of systematic origin; or, in other words, that they are only the effects, and not causes of gouty action.

In a paper read before the Royal Society, June 22d, 1797, Dr. Wollaston demonstrated, that the concretions which form on the joints of gouty persons are composed of the lithic acid and soda, forming a compound salt, the lithiate or urate of soda. Dr. G. Pearson likewise, in a paper read before the same society in December 1797, in which he relates the results of the analyses of upwards of three hundred urinary calculi, particularly mentions the existence of this acid in arthritic concretions. The word lithic, borrowed from the term lithiasis, he recommends to be changed to that of uric. Fourcroy, also, about the same time discovered the uric acid in these concretions.

Notwithstanding the many remedies which have been highly extolled at different times for the cure of gout, it is a fact well established, that not one which has yet been offered possesses any such power; and all that can be done with safety to the patient is to conduct him through the paroxysm when it has once commenced, afterwards of abstaining from the remote causes, such as full living, acescent food, strong liquors, &c., and making use of gentle daily exercise, to render recurrences of the disease less frequent and more mild than they otherwise might be. In short, great temperance and regular moderate exercise are the most likely means to prevent severe and frequent attacks.

During a paroxysm of the gout, if the attack is severe, it may be necessary to confine the patient in bed, keeping the inflamed parts of a moderate temperature. The confinement of morbid heat by covering of a very warm nature, might only serve to increase pain and prolong the disease. He is at the same time to be kept as quiet and free from all irritation as possible; and as gouty people are generally captious from the severity of the pain which they suffer, they should be solaced, and not be thwarted. If the patient is young and plethoric, he should ab-



stain from all sorts of animal food, aromatics, and fermented liquors, living on water-gruel, panado, sago, arrow-root, and other farinaceous substances. His drink should be some mild diluting beverage, such as barley-water, toast and water, or tea. In elderly people, where the tone of the stomach is weak, or where the patient has been in the constant habit of using strong liquors, and of living principally on animal food, a more generous diet with a moderate use of wine, may be allowed: and as Madeira and Sherry wines are the least apt to become acid on the stomach, they ought therefore to be used in preference to any other kind.

The fostering of arthritic inflammation by the topical use of increased temperature, or covering the parts with flannel, &c., together with the internal employment of stimulant medicines, with a view to obviate its retrocession, and ensure its final extinction, on the part affected, is supposed, by Dr. Kinglake, to be a very erroneous practice, and as repugnant to the indication of relief furnished by every constitutional feature of the disease.

He tells us, that observation and reflection have forced on his conviction the *fact*, that however loose the analogy may be between the respective proximate causes of ordinary phlegmonous and arthritic inflammations, the resemblance is sufficiently close in the degree of concomitant temperature. In both, the vascular actions of the system, and of the part affected, generate a morbid excess of heat, alike referrible to distempered conditions of motive power. Impressed with the pursuasion, that with regard both to inordinate temperature, and to its general as well as topical manifestations, a radical similitude subsists between these nominally different inflammations, it has appeared to him strictly warrantable to institute a perfectly similar plan of cure, viz: that of reducing heat by keeping cloths wetted with cold water constantly to the parts affected. In support of the efficacy of this plan, he cites several cases which were successfully treated by topically abstracting the stimulus of heat from the parts by water, and such other cold media.

We are further told by him, that he thinks himself justifiable in drawing the following inferences, viz: that a high temperature, whether the cause or effect of the morbid conditions of vital power, which proximately constitute gout, is safely and speedily controllable by the simple application of cold water; that the prevailing opinion relative to the critical nature of that disease on the extremities is liable to much distrust: that the local deposit is not, as commonly supposed, a particular preponderance and detention of the constitutional disorder, but that it originates in the parts themselves, and is thence distributed by associated influence over the system; and lastly, that the longer the local affection endures, the greater probability there will be of morbid sympathies being generated and established on the vital organs, which may terminate in rapid and painful death.

Such is Dr. Kinglake's theory; and being somewhat vague, is not, I think, likely to make many proselytes. Popular prejudice is, moreover, very strong against the remedy recommended by him; and therefore the young practitioner in particular should be cautious in advising it.

It is indeed well known that various diseases of the head, such as headache, vertigo, mania, epilepsy, apoplexy, and a great depression of spirits, in many instances, immediately, or soon succeed the recession of inflammatory gout from the extremities; and a late writer of eminence has recorded two cases where immersion of a gouty foot in water produced instant relief from the pain, and a proportionate abatement of the inflammation, but which were followed in a few hours by hemiplegia, showing clearly the danger of adopting Dr. Kinglake's plan.

The application of cold water in gouty paroxysms has not however originated with Dr. Kinglake, for it is a mode of treatment noticed by Hippocrates and Celsus, and even by some modern writers. It is therefore only the revival of a practice which has frequently been brought forward, and again abandoned, from its being somewhat hazardous. If the cooling or refrigerant treatment is *ever* adopted, I think it should not be ventured upon until the stomach and other viscera have shown indubitable signs of performing their functions with their proper and accustomed energy, and till the local inflammation has existed for a day or two; and even then, no greater degree of cold should be applied, or be continued for a longer duration, than will be sufficient to subdue the local inflammation. If, notwithstanding this precaution, symptoms of constitutional disturbance should arise, we ought then immediately to remove the refrigerant application, and endeavor to relieve the torpor by suitable stimulants. In no case should the application of cold to the extremities be resorted to without keeping the stomach all the time in a moderate state of activity.

Another physician tells us, that with regard to external applications in the gout, none out of the many which he had tried proved so effectual as steam, and occasionally confining the inflamed part in a rarer atmosphere; for which purpose he recommends a steady use of the air-pump vapor bath every other or third day. This treatment, we are informed, has not only the happiest effects on the paroxysms while present, but renders subsequent ones more mild, protracting likewise the intervals between them.

Gout not being, however, a mere local complaint, as Dr. Kinglake and some others seem to imagine, but really a constitutional one, local applications, when resorted to, should, I think, always be joined with internal remedies. Of the two external applications just mentioned, the latter seems to be the safer, although it may not probably remove or carry off inflammation in the limb so quickly as the former.

Instead of cold applications to parts affected with gouty inflammation, a modern writer is of opinion much benefit may be derived from the medium of grateful warmth, by constantly moistening them with a tepid fluid. This may be done either by a sponge, or, perhaps, more effectually by cloths wetted in it, renewing them as often as they become dry. The fluid should be aqueous; and for the purpose of rendering it more evaporable, a portion of alcohol may be conjoined with it. The temperature of the application should not be under 75, nor exceed 85; for if either hot or cold, the intention of the remedy is frustrated. The superincumbent covering ought to be light and cool.

The drying of the parts will be the detachment of stimulant heat, and

the cooling effects of the reduced temperature will be felt on the inflamed surface. The refrigerating influence produced by incessantly moistening the inflamed part with a tepid fluid, and leaving it to dry by evaporation, will certainly be powerful; and I have experienced it to be a much safer method of detaching heat than by the application of cold, as advised by Dr. Kinglake.

Blistering, sinapisms, stinging with nettles, burning with moxa, as practiced in the East Indies, rubbing the part with camphorated spirits, pediluvium of simple water, a tepid bath of water and muriatic acid, in the proportion of one ounce to a gallon of water, and covering the part with oil-skin, are remedies which have been proposed for bringing a fit of the gout sooner to a termination, when it has been very tedious; but they are all attended with great risk and therefore ought to be avoided.

Percussions and frictions, succeeded by compression with a flannel roller, have been reported to have proved as beneficial in gout as in rheumatism.

On the termination of a fit of the gout, a fresh paroxysm is to be delayed or rendered less violent by observing great temperance during the intervals; by avoiding the exciting causes of the disease; by moderate regular exercise every day; by avoiding cold; and by strengthening the body. In young persons, a cold bath, with moderate exercise afterwards, might probably be used with advantage during the intervals; but in elderly people, or where there is any inflammation of the joints, this remedy should never be recommended. Drinking half a pint daily of the double acidulated soda water possibly may have a good effect during the intervals of the paroxysms.

When any swelling and stiffness remain in the joints after the paroxysms have ceased, the stimulus of galvanism, or electricity, conjointly with the frequent use of the flesh-brush, may be attended with some benefit.

In consequence of frequent attacks of the gout, assisted, probably, by some peculiarity of the patient's constitution or habit of body, little swellings or nodosities arise on or near the joints of the fingers; for the removal of which we are told by a late writer that the following indications should be observed: viz. first to diminish the increased action of the vessels in the part by which the secretion of the morbid matter is performed; secondly, to promote a free perspiration of the part affected; and, thirdly, to correct the prevailing disposition to acidity in the primæ viæ, and in the system in general. To accomplish the first of these indications, medicine which will equalize the circulation and throw off the morbid matter, and strengthen the part, should be administered. To obtain the second object, the part is to be surrounded by a lobelia poultice, this will stimulate and relax the surface and admit the free exit of perishable matter through the skin.

To fulfil the third indication a due attention is to be paid to the mode of living, by avoiding acid and acescent matters, and particularly such fermented liquors as have begun to manifest marks of acescency and neutralize the acidity by our common alkalis.

From the combined influence of these measures it appears, that the utmost success that hope could look for has been obtained. The gradu-

al diminution, and finally, the complete removal of nodosities which had existed for several months, have been thus procured; while those which had existed for some years, have been so much reduced as to allow of considerable motion in joints which had become nearly immoveable.

Dr. Bardsley, physician to the Manchester Infirmary, mentions in his Medical Reports, that he looks on nodosities of the joints to be more nearly allied to chronic rheumatism than to gout.

In irregular, or atonic gout, where no inflammation of the joints is produced, although the gouty diathesis prevails in the system, but the stomach is affected with indigestion, flatulency, acid eructations, and pain, the patient ought not only to avoid all debilitating causes, but should employ proper means for strengthening the system in general, and the stomach in particular.

To support the tone of the system, a proper quantity of animal food ought to be taken, and that which is most nutritive and plain should be preferred. Gout, when in the system, and not regularly formed, requires an excess of animal food to drive it to the extremities, though in some measure it may aggravate the disease should a paroxysm ensue. With the same view a moderate allowance of wine will be proper; but all kinds of acescent wines, such as hock, claret, &c., ought to be avoided. Madeira and Sherry are those which will be the most suitable. If the acidity in the stomach is perceived to be increased by a use even of these wines, weak brandy and water, without any addition of either sugar or lemon, may then be substituted.

In severe attacks of atonic gout, some practitioners have advised the application of blisters to the lower extremities; but they ought to be avoided in those cases which are attended with much pain in the parts. Sinapisms, pediluvium, together with wine and other stimulants, have also been recommended in atonic gout for bringing the disease to the extremities.

The greatest attention should be paid to promote perspiration and avoid cold; and this is most effectually done by warm clothing, joined to moderate exercise. A flannel shirt with a pair of stout shoes, and thick woollen or fleecy hosiery stockings, will be necessary articles of attire for those who cannot remove in the winter to a warmer climate.

When the stomach or intestines become affected in consequence of retrocedent gout, immediate relief ought to be attempted by making the patient drink freely of wine, or even brandy, joined with aromatics.

The gout imitates many diseases, as has already been observed; and by being mistaken for them and treated improperly, is often diverted from its regular course, to the great danger of the person's life; for which reason, those who have had the gout ought to pay particular attention to any complaint that may happen to take place about the time they may have reason to expect another attack of it. Those likewise who never had the gout, but who, from constitution or manner of living, have reason to expect it, ought also to be very circumspect with regard to its first approach, as by any wrong conduct, or improper treatment, it might be diverted from its right course, and be thrown upon some vital part.

In those who have had an hereditary predisposition to gout, it is cer-



tain that it may often be prevented from taking place by paying an early and strict attention to regimen, temperance, and exercise; and even after it has shown itself by a regular attack, its returns may possibly be prevented for the remainder of life; but it is only those who have sufficient resolution to observe a steady perseverance in such a course, that can have any reason to expect a cure.

Exercise in persons disposed to the gout, not only strengthens the system, but tends likewise to prevent plethora. To prove advantageous, it must, however, be constant, regular, and continued through life, and should only be moderate. In the beginning of the disease, when the disposition or tendency to it is not strong, exercise will often prevent an attack which might otherwise have taken place, and in the intervals it will always be proper as long as the patient retains the use of his limbs. In a more advanced stage of the disease, where there is an evident disposition to paroxysm, much walking ought to be avoided, as it might tend to hasten its approach, by increasing the inflammatory disposition in the lower extremities.

While the vigor of the system still remains unimpaired, either by intemperance or frequent attacks of the gout, an abstinence from animal food may be entered upon with safety, in order to prevent a recurrence of the disease; but if this abstinence shall not have been adopted until the constitution has been hurt by intemperance, frequent fits, or the decline of life, it certainly will prove injurious, and might tend to bring on an irregular attack. A sudden change from a full to a spare and low diet, will in all cases whatever be improper; and whenever an alteration is made in the mode of living, it ought to be done in a gradual manner.

Where an abstinence from animal food is to be observed, a diet, consisting of milk and the farinaceous seeds will be the most proper, and all kinds of spirituous and fermented liquors are to be avoided; but where custom or a declining state of the system has rendered them absolutely necessary along with the use of animal food, they are then to be used with moderation.

Besides regimen and exercise, it will be necessary for the patient to observe universal temperance; he is to shun night studies, and all excess in sensual gratifications; he should go to bed betimes, and rise early; and he should avoid all exposure to cold, but more particularly getting wet in the feet. In the gout, as well as in regard to all other diseases, the cardinal rules in preserving the health are founded on temperance and exercise, on the choice of all those means which are found by the individual to invigorate the system, and the shunning whatever injures and enfeebles it.

Some persons much disposed to gout, who have been reduced to poverty and obliged to work hard and use a low diet, have been cured by it; which clearly demonstrates the efficacy of exercise, temperance, and a spare regimen.

*Treatment.*—The proximate cause of gout has been studiously investigated by almost every writer upon the subject.

The doctrine which we believe correct is, that gout depends upon a certain morbid matter, almost always present in the body, which thrown

out upon the joints, or other parts, produces the several phenomena of the disease. This being granted, the way is evidently paved for the practitioner. Every true Thomsonian is well acquainted with the process of removing from the system morbid matter. If the morbid matter is situated in the stomach, bowels, blood, or elsewhere it can be very readily removed by common Thomsonian courses of medicine, and the only reason why the *mineralists* have failed in all cases to remove the morbid cause of gout, has been from the fact, that they had not the knowledge of a suitable remedy.

It must not be forgotten that a close affinity subsists between gout and rheumatism; it may be traced in the identity of the structures which are attacked, in the similarity of the terminations of the two forms of disease, and in their mutual tendency to effect some internal organ by metastasis, and hence, the similarity of the practice. There can be a very slight variation in practice, only, as the indications to be answered are nearly the same in gout as in rheumatism, and for the general treatment, we beg leave to refer the reader to our treatment in the latter form of disease. We beg leave, however, to repeat in this place, that the most *thorough* courses, and too, applied daily, will be found much more efficient in gout than mere defensive or milder measures. During paroxysm of the gout, the treatment must be active and appropriate; after they have subsided the remaining duty to be performed, is the restoration of the healthy state of the digestive functions and of due strength in the weakened limbs. If there is a translation of the disease from the extremities to the head, so as to threaten apoplexy or palsy, the treatment must be the vapor bath to the lower extremities, the head bathed in cold vinegar, and diffusive stimulants and other remedies which will determine the blood to the extremities. In short, the treatment must be the same as is recommended in cases of apoplexy and palsy.

Where the gout attacks the lungs and produces asthma, the treatment must be precisely that which is recommended for the cure of asthma, a very free use of anti-spasmodics.

The efforts of the practitioner should be steadily exerted during the intervals of the paroxysms, to prevent their recurrence by a due attention to the predisposing and exciting causes.

Thorough courses of medicine, mild aperients, sudorifics, and the free use of tonics, with the strictest attention to what has been said of food and exercise, may be confidently relied on.

## RHEUMATISM.

RHEUMATISM is an affection of the extremities and external coverings of the human body, occupying the muscular, tendinous, and fibrous textures, and characterized by pain, stiffness, and swelling of a joint, with or without fever according to the violence of the disorder. In common life, a threefold distinction is made, *viz*: into the true rheuma-

tism, the rheumatic gout, and the rheumatic fever. The two latter alone merit the title of *inflammations*, but there is obviously a close analogy in the pathology of all these affections. In their symptoms and mode of treatment, however, sufficient difference exists to entitle them to separate examination. It is certainly a curious circumstance, considering the frequency of this complaint, that there should still be so much obscurity in regard to several of the fundamental doctrines connected with rheumatic inflammation. This may be partly explained, perhaps, from its being a disease of so little danger, as never to have received any elucidation from the labors of the morbid anatomist.

We shall begin by the consideration of the highest grade of rheumatism, the rheumatic fever of the world, the acute rheumatism of nosologists, a painful and severe disease thus characterized. It is ushered in by a sudden attack of rigors, followed by the usual symptoms of pyrexia, and is particularly distinguished by the great pain and swelling which affect one or more joints, coupled with an utter inability to move them, and very commonly with considerable redness. The affected joints are acutely tender to the touch. The pains are aggravated towards night, and for the most part, at all times, from external heat. The swelling, except in certain cases hereafter to be specified, does not take the form of the joint, but is diffused over the cellular membrane in its neighborhood. Several joints are commonly affected at the same time, but one of the most singular phenomena of rheumatic inflammation is, the strong tendency which it exhibits to *shift its situation*: to abate in one or two joints, often very suddenly, and to become as suddenly violent in another, and a distant part.

The accompanying fever presents several important peculiarities. The pulse seldom exceeds 100 or 110 in the minute; but instead of the hardness which characterizes inflammatory fever, it is full, soft, and as it were *round*. The skin, instead of being hot, harsh, and dry, is commonly in a state of profuse perspiration; and a remarkable acid odour of its secretion may be noticed. The tongue is always deeply loaded. The papillæ appear elongated, and covered with a thick and abundant mucus. The functions of the brain are in a peculiar manner exempt. Headache is seldom present in any form of rheumatic inflammation, acute or chronic; and delirium is almost unknown. There is a great thirst, but rarely any nausea, or vomiting. The bowels are costive, though easily made to move. There is a sallowness in the aspect, and a peculiar expression of the countenance, sufficiently distinct from that of common febrile anxiety.

Different as are the local and constitutional symptoms from those of other phlegmasiæ, the terminations of rheumatic inflammation are no less peculiar. The local inflammation may run high, but it never proceeds to suppuration. It is seldom, indeed, that any permanent injury is done to the joint; for if effusions of a transparent gelatinous fluid into, or around the sheaths of tendons and the capsular ligaments, take place, they are commonly absorbed in a short time. The most important consideration in this view of the subject is, the disposition which exists, in a state of acute rheumatism, to an affection of some internal organ by *metastasis*, or rather by an extension of inflammation; for it is

not often that the joints are relieved when this event takes place. The organ chiefly liable to be so affected is the heart, and it is from this occurrence alone that any danger in the progress of the disease is to be apprehended. The symptoms that result are those of common thoracic inflammation; the tendency to which, therefore, constitutes an important object of attention in the treatment of acute rheumatism. It has already been remarked that the circumstances which lead to this extension of rheumatic inflammation to an internal organ have never yet been accurately investigated.

No disease is more liable to relapse on slight occasions than acute rheumatism. Going out a little too early in the open air, too much exercise of a particular joint, or an excess in diet, have frequently brought it back in all its former violence. Acute rheumatism is characterized also by a tendency to a recurrence after a long interval. Those who have once suffered from an attack of the disease should therefore be particularly careful to avoid what we shall point out as its existing causes, or to obviate them by proper attention to clothing. Rheumatism is certainly the most tedious of all the acute inflammations. In many cases it appears to run a defined course, which does not admit of being shortened by any process of treatment, and in a certain length of time to wear itself out. This is seldom less than a month, or longer than six weeks. That the acute sometimes terminates in a state of chronic rheumatism cannot be doubted; but, instead of being a frequent occurrence, as is often imagined, this is in fact rare; though the recovery from genuine acute rheumatism is tedious, it is usually perfect.

Children are very seldom the subjects of acute rheumatism. It most commonly occurs from the age of puberty to the thirtieth or thirty-fifth year of life, and chiefly affects those of sanguine temperament, robust form, and plethoric habit of body. It prevails principally in the months of December and January, and least frequently in August and September. Cold, with moisture, particularly where long applied, is certainly the most common, and perhaps it might be added its only exciting cause. Hence it is that we find it attributed, in a large proportion of cases, to sleeping in damp beds, living within damp walls, sitting in damp clothes, or working in damp situations.

Very little is known regarding the precise seat of inflammation in acute rheumatism. It appears to be situated primarily in capsular ligaments, tendinous sheaths, and aponeurotic expansions; but the cellular membrane around the joints probably partakes of inflammation in the active form of the complaint. In this, perhaps, consists the principal local distinction between acute and chronic rheumatism. In some instances of disease, not usually distinguished by the physician from those of common rheumatism, though known to the world by the name of the *rheumatic goat*, the swelling will be found to take the exact form of the joint, or of a bursa in its neighborhood; and the affection is then simply *inflammation of synovial membrane*. By some pathologists it is imagined that such a disease is altogether distinct from rheumatism, and the term *arthritis* has been applied to it. It occurs both with or without fever. It appears to differ from rheumatism in its causes, progress, and treatment, as well as in its symptoms. It has been traced, for instance, to



repelled gonorrhœa. It is frequently confined to a single joint, as the knee, or the elbow, and then commonly falls under the cognizance of the surgeon. It exhibits less tendency to shift its situation from one joint to another, and is more under the control of local remedies, than genuine, or as it may be called, *diffuse* rheumatism. As this subject, however, is very obscure, but still more, as it has not yet received those illustrations which may probably throw considerable light upon the nature of the affection, I simply state the circumstances, without venturing an opinion on the pathological principles which they involve.

If an opinion were formed from the various, and even opposite modes of treatment which have been recommended in the common acute rheumatism, not upon theoretical grounds, but after ample and successful experience, it might rationally be supposed, that the disease occurs in the most opposite states of the system; but this opinion is not borne out by the observation of symptoms. I believe the better conclusion to be, that acute rheumatism is at all times a tedious, and rarely a dangerous disease; that a large proportion of cases would recover with very slight care; and that, in many, medical treatment is of little further service than as obviating the tendency to internal inflammation. It cannot, I think, be doubted, with regard to the power of *cutting short* the disease, that a considerable difference exists between rheumatism and common inflammation.

*Treatment.*—In acute rheumatism the Botanic practice is very certain to affect a cure sooner than any yet known. We have treated several cases, and while we have in no one case failed to cure our patient, we have at the same time, saved a great deal of pain and suffering to our patients from protracted illness. Dr. Thomson assures us that a cure is easily effected, if timely and properly attended. In common cases, says he, “taking the rheumatic drops, and bathing the affected parts with the same, will remove the complaint.” When the case is bad, carry the patient through a course of medicine, and bathe with the drops, repeating it as the case may require; at the same time, give a tea of poplar bark, or hemlock boughs, and many other articles which have been recommended as good for this complaint, may also be made use of to advantage. To effect a speedy cure, we must in all cases have recourse to thorough courses of medicine, followed by our laxative tonics; and in no case must tonics alone be relied on; they must follow after our cleansing medicines. When the joints of the extremities swell much, and are highly painful, they must be poulticed as long as the soreness and pain remains. We must rely more confidently upon constitutional remedies than local applications; yet, we strongly recommend local treatment in the cure of acute rheumatism. In all cases the vapor bath is very appropriate, and combined with diaphoretics, will in no case fail to prove highly beneficial.

CHRONIC RHEUMATISM is of constant occurrence, and this circumstance alone is sufficient to point out that it is not often the sequel of the acute form of the disease. It is characterized by pain of the joints aggravated on motion, stiffness of the joints, thickening of the several structures in their vicinity, or increased effusion into the synovial bags. It is readily distinguished from the acute rheumatism by the want of

inflammatory fever, and of redness in the affected part. To this kind of affection the term *rheumatism* is, in common language, specially appropriated.

1. Three species of chronic rheumatism may be distinguished. The first is that which is connected with a state of febrile excitement in the system, and which would be more correctly designated by the term *subacute rheumatism*. It is known by the pains occasionally shifting their situation suddenly, as in the acute form of the disease, and by their being increased by warmth, and especially, at night, by the warmth of the bed. The frequent occurrence of the œdema along with the affection of the joints, may serve to distinguish this from the other species of the disease. Those joints which are surrounded by a large mass of muscular substance, and which are the most constantly exerted, are especially liable to it, such as the hip, and joints of the lumbar vertebrae. This state of chronic rheumatism is accompanied with a white tongue, thirst, a quickened pulse, and a costive state of the bowels.

2. The second species of chronic rheumatism is marked, not by any degree of excitement in the system, but by the absence of constitutional symptoms. Here it is not unreasonable to believe, that there may be a loss of tone in the vessels of the affected part. It is not so common as the preceding species, but it sometimes follows it. Stiffness of the joint is here the prominent symptom. *Pain*, in this form of the complaint, is often not at all felt except on motion, or on occasion of changes in the heat or moisture of the atmosphere. It is relieved rather than increased by the warmth of bed. The pain and stiffness do not shift from joint to joint. Spontaneous coldness of the limb, and even a degree of paralytic torpor, are often complained of by the patient. The pulse is seldom quick, or the tongue white.

3. The third species of chronic rheumatism is attended with permanent derangement in the structure of the joint; and it is that form of disease which has been ably described by Dr. Haygarth, under the title of Nodosity of the joints. The ends of the bones, the periosteum, and ligaments become thickened; and nodes form upon them, often to such an extent as to distort the joint in the most unsightly manner. This form of rheumatism chiefly affects the fingers, but I have seen it also in the knees and ancles. It is principally met with in women, after they have passed the period of menstruation. It is attended with pain of the joint, particularly severe at night.

The usual causes of chronic rheumatism are exposure to cold and moisture, or to partial currents of air; local injuries, such as strains and bruises; and it is also one of the common effects of the syphilitic poison, and of mercury. The structures affected in chronic rheumatism are those called by Bichat *fibrous*—*viz*: the periosteum in every part of its extent, the tendons and tendinous sheaths of muscles, the ligaments around the joints, the investing membranes of the nerves and of the teeth, and not unfrequently the substance of muscle itself. The sclerotic coat of the eye, which has a dense structure of an analogous kind, is subject also to a species of *rheumatic* inflammation. To distinguish this affection is by no means easy; nor is this the only instance in which chronic rheumatism has given occasion to difficulties in diagnosis. Lumbago

has been mistaken for nephralgia or lumbar abscess; rheumatism of the intercostal muscles for pleurisy; and sciatica for ulceration within the cavity of the acetabulum.

As a general rule, constitutional treatment is recommended. Particular attention must be paid to the constitution and the habit of the patient, and he must be careful to avoid all the exciting causes; and due attention must be paid to diet and exercise. Perhaps more can be done towards the relief of the complaint than is generally supposed.

*Treatment.*—Every symptom proves clearly that chronic rheumatism is a form of disease of great debility, and the mode of treatment is certainly founded upon this idea. It is thence that stimulants of the proper kind are found highly serviceable. Warm active balsams and resins, the essential oils of all kinds nearly, from resinous substances, and from aromatics or pungent plants, often proves very valuable in the treatment of chronic rheumatism. Acute rheumatism is soonest removed by sudorifics: so chronic rheumatism may often be relieved, and indeed, it is contended by some of our physicians, “radically cured by diaphoretics of a highly stimulating quality.”

The slight fever which is attendant on rheumatism, should always be supported and encouraged, as it is generally accompanied with sweatings, which symptom, says Dr. John Mason Good, “Seems to be an ineffectual effort of the *instinctive principle*, or remedial power of nature to carry off the complaint.” And we have the highest authority for asserting that perspiration alone is the true method of curing rheumatism. The author just quoted, remarks, that “It is by this evacuation alone (perspiration) that we can at length succeed in effecting a cure.” And he contends that perspiration will always be found unavailing as long as it continues clammy, and the skin feels harsh, and there is a sense of chilliness creeping over the body, or any part of it during the perspirable stage. In this he is not at all mistaken. And that practice is evidently good that promotes perspiration, by opening the pores of the skin, and exciting it by the administration of diffusible stimulants, or diaphoretics.

The vapor bath can in no instance be dispensed with, for by administering the bath with suitable diaphoretics, we are following up the indication of nature herself; she is evidently endeavoring to relax the vascular or capillary system, and to render her efforts effectual in all cases. Let her have the above collateral assistance, and there will be no unprofitable expenditures of strength. It may be found necessary to cleanse the stomach and bowels often; and where great torpor and debility of the general system prevails, stimulant and tonic treatment must follow.

As an auxiliary remedy, pepper poultices, linaments, rubifacients, &c., may be applied to the affected parts, and is of some consequence. The regular use of the flesh-brush, with electricity or galvanism, may not be amiss in cases of long standing, where there is much rigidity of the parts. The above will be particularly necessary in cases where the cellular membrane in the neighborhood of the joints is tumefied.

## OF EXANTHAMETA, OR ERUPTIVE FEVERS.

MOST of the diseases of this order are contagious, and attack a person only once in his life: they begin with fever, and at a definite time numerous and small eruptions are perceived scattered over the skin. In the nosology of Dr. Cullen, erysipelas is placed among this order, and although considered by some as contagious, still as it often affects the same person repeatedly, and in some becomes constitutional, it cannot be so arranged with propriety. In this volume it is placed with erythema among the preceding order of phlegmasiæ.

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## VARIOLA, OR SMALL-POX.

SMALL-POX is a disease of a very contagious nature, marked by a fever which is usually inflammatory, but now and then is of a typhoid nature, attended with vomiting, and upon pressure of the epigastrium, with pain; succeeded after a few days by an eruption of red pimples on different parts of the body, which in the course of time suppurate, and scab, which at length fall off, leaving frequently behind them little pits in the skin, and, in severe cases, scars.

With regard to the history of the small-pox, it appears from the researches of eminent writers, that this disease, as also the measles, had prevailed in China and Hindostan from remote antiquity, yet had not extended to the more western nations until the middle of the sixth century. About this period these maladies reached the southern coasts of Arabia, by vessels trading with India, and broke out near Mecca, during the war of the elephant (as it has been termed,) in the year 569, immediately before the birth of Mahomet.

During the latter parts of the sixth, and whole of the seventh century, they were spread by the Arabians over the remaining countries of Asia, and all that part of Africa which is washed by the Mediterranean Sea. In the eighth century Europe was contaminated in consequence of the Saracens invading Spain, Sicily, Italy, and France, and the above diseases gradually extended to the north. They had reached Saxony, Switzerland, and England, in the ninth or tenth century. And lastly, in the beginning of the sixteenth century, twelve years after the death of Columbus, the infections were transported by the Spaniards to Hispaniola, and soon afterwards to Mexico, and diffused speedily over that hemisphere also.

The small-pox attacks people of all ages, but the young of both sexes are more liable to it than those who are much advanced in life; and it may prevail at all seasons of the year, but in general it is most prevalent in the spring and summer.

It rarely happens that any person is attacked a second time with the disease, however he may be afterwards exposed to its infection, or even be repeatedly inoculated with variolous matter. A few instances to the



contrary have now and then occurred, however, and with a high degree of severity. Affirmations of this from the highest authorities are on record. Dr. Jenner was of opinion, I believe, that the susceptibility to receive variolous contagion always remains through life, but under various modifications or gradations, from that point where it passes silently through the constitution, up to that where it appears in a confluent state, and with such violence as to destroy life.

The small-pox is distinguished into the distinct and confluent; implying, that in the former the eruptions are perfectly separate from each other, and that in the latter they run much into one another. The distinct may often be distinguished from the confluent before the eruption appears, by the mildness of its attack, by the synochal type of the fever, the late appearance of the eruption and the absence of typhoid symptoms.

Some anomalous varieties of small-pox occasionally occur in practice, viz: the crystalline, in which the fluid never becomes opaque or purulent; the vesicular, in which small vesicles appear in the interstices of the pustules; and some others; but which are all merely different modifications of the same disease.

Both the distinct and confluent small-pox are produced either by breathing air impregnated with the effluvia arising from the bodies of those who labor under the disease, or by the introduction of a small quantity of variolous matter into the habit by inoculation; and it is probable that the variety of the small-pox is not owing to any difference in the contagion, but depends on the state of the person to whom it is applied, or on certain circumstances concurring with the application of it.

Many physicians of eminence are of opinion, that the variolous contagion is limited to a narrow sphere, and that it seldom, if ever, is conveyed by the wind to a distance, as some have imagined it capable of being. Dr. Haygarth, in his Sketch of a Plan to exterminate the casual Small-pox from Great Britain, informs us, that certain facts appear to exhibit *negative* proofs that the open air is not contaminated to a great distance from the patient; not to one thousand five hundred feet, nor probably to one hundredth part of the space. He mentions, that very few cases have been adduced by those who have corresponded with him on this subject, in which clothes exposed to variolous miasma have been even suspected of conveying infection, and that several have given a negative testimony against this mode of communication. He further notices, that innumerable instances are to be produced where medical men, after exposing themselves to the miasms of an infectious chamber, in a very short time nearly approach persons liable to the distemper, who are yet not infected by the interview; and that inoculators are daily in this situation without communicating the casual small-pox. The period during which infection remains latent in the body, he observes, is determined by the testimony of many to be, in the inoculated small-pox, from the fifth day to the sixteenth, seventeenth, and even the twenty-third: in the casual or natural small-pox, a little but not much longer than the common period in inoculation.

A variety of opinions have been entertained respecting the effect of

the variolous infection on the fœtus in utero; a sufficient number of instances, however, have been recorded, to ascertain that the disease may be communicated from the mother to the child. In some cases the body of the child at its birth has been covered with pustules, and the nature of the disease has been most satisfactorily ascertained by inoculating with matter taken from these pustules. In other cases there has been no appearance of the disease at the time of the birth, but an eruption and other symptoms of the malady have appeared so early, as to ascertain that the infection must have been received previously to the removal of the child from the uterus. Moreover, some cases reported in the first volume of the *Medico-Chirurgical Transactions of London*, by Dr. Jenner, point out the obvious infection of the fœtus before birth, and communicated through the mother, she being already secure from any visible occurrence of the disorder—which is indeed a very extraordinary circumstance.

Four different states or stages are to be observed in the small-pox—first, the febrile; second, the eruptive; third, the maturative; and fourth, that of declination or scabbing, which is usually known by the name of secondary fever.

When the disease has arisen naturally, and is of the distinct kind, the eruption is commonly preceded by a redness in the eyes, soreness in the throat, pains in the head, back, and loins, weariness and faintness, alternate fits of chilliness and heat, thirst, nausea, inclination to vomit, and a quick pulse.

In some instances these symptoms prevail in a high degree, and in others they are very moderate and trifling. In young children, startings and convulsions are apt to take place a short time previous to the appearance of the eruption, always giving great alarm to those not conversant with the frequency of the occurrence.

About the third or fourth day from the first seizure, the eruption shows itself in little red spots (similar to flea-bites) on the face, neck, and breast; and these continue to increase in number and size for three or four days longer; at the end of which time they are to be observed dispersed over several parts of the body.

If the pustules are not very numerous, the febrile symptoms will generally go off on the appearance of the eruption, or they will become very moderate. It sometimes happens, that a number of little spots of an erysipelatous nature are interspersed among the pustules; but these generally go in again as soon as the suppuration commences, which is usually about the fifth or sixth day; at which period a small vesicle, containing an almost colorless fluid, may be observed upon the top of each pimple.

Should the pustules be perfectly distinct and separate from each other, the suppuration will probably be completed about the eighth or ninth day, and they will then be filled with a thick yellow matter; but should they run much into each other, it will not be completed till some days later.

When the pustules are very thick and numerous on the face, it is apt about this time to become much swelled, and the eyelids to be closed up; previous to which, there usually arises a hoarseness and difficulty of

swallowing, accompanied with a considerable discharge from the mouth of viscid saliva.

About the eleventh day the swelling of the face usually subsides, together with the affection of the fauces, and is succeeded by the same in the hands and feet; after which the pustules break, and discharge their contents, and then becoming dry, they fall off in crusts, leaving the skin which they covered of a brown red color, which appearance continues for many days. In those cases where the pustules are large, and are late in becoming dry and the scabs falling off, they are very apt to leave pits behind them; but where they are small, suppurate quickly, and are few in number, they neither leave any marks behind them, nor do they occasion much affection of the system.

In the confluent small-pox the fever which precedes the eruption is much more violent than in the distinct, being attended usually with great anxiety, heat, thirst, nausea, vomiting, and a frequent and contracted pulse, and often with coma or delirium. In infants, convulsive fits are apt to occur, which either prove fatal before any eruption appears, or they usher in a malignant species of the disease.

The eruption usually makes its appearance about the third day, being frequently preceded or attended with a rosy efflorescence, similar to what takes place in the measles: but the fever, although it suffers some slight remission on the coming out of the eruption, does not go off as in the distinct kind; on the contrary, it becomes increased after the fifth or sixth day, and continues considerable throughout the remainder of the disease.

As the eruption advances, the face, being thickly beset with pustules, becomes very much swelled, the eyelids are closed up, so as to deprive the patient of sight, and a gentle salivation ensues, which towards the eleventh day is so viscid, as to be spit up with very great difficulty. In children, a diarrhoea usually attends this stage of the disease instead of a salivation; which is to be met with only in adults.

The vesicles on the top of the pimples are to be perceived sooner in the confluent small-pox than in the distinct; but they never rise to an eminence, being usually flatted in; neither do they arrive to a proper suppuration, as the fluid contained in them, instead of becoming yellow, turns to a brown color.

About the tenth or eleventh day the swelling of the face usually subsides, the hands and feet beginning then to puff up and swell; and about the same time the vesicles break, and pour out a liquor that forms into brown or black crusts, which upon falling off leave deep pits behind them that continue for life; and where the pustules have run much into each other, they disfigure and scar the face very considerably.

Sometimes it happens that a putrescency of the fluids takes place at an early period of the disease, and shows itself in livid spots interspersed among the pustules, and by a discharge of blood by urine, stool, and from various parts of the body.

In the confluent small-pox, the fever, which, perhaps, had suffered some slight remission from the time the eruption made its appearance to that of maturation, is often renewed with considerable violence at this

last mentioned period, which is what is called the secondary fever; and this is the most dangerous stage of the disease.

It has been observed, even among the vulgar, that the small-pox is apt to appear immediately before or after the prevalence of the measles. Another curious observation has been made relating to the symptoms of these complaints, namely, that if, while a patient labors under the small-pox, he is seized with the measles, the course of the former is generally retarded till the eruption of the measles is finished. The measles appear, for instance, on the second day of the eruption of small-pox; the progress of this ceases till the measles terminate by desquamation, and then it goes on in the usual way. Several cases are, however, recorded in the *Medical and Physical Journal*, as likewise in the third volume of the *Medical Commentaries*, in which a concurrence of the small-pox and measles took place without the progress of the former being retarded.

The only diagnosis that is necessary is between small-pox and chicken-pox. In the latter the pustules commonly go back without coming to proper suppuration. Their number, size, appearance, and course, differ very essentially. There is great reason to suppose, however, that the one disease is sometimes mistaken for the other, which may account for many of the supposed failures of the vaccine inoculation.

The distinction is sufficiently apparent between the chicken-pox and the small-pox when each of these diseases appears in its proper colors; but when the latter is peculiarly mild, and the former extraordinarily violent, which is sometimes the case, then all the discriminating marks are obscured.

The distinct small-pox is not attended with danger, except when the eruptive fever is very violent, or when it attacks pregnant women, or approaches nearly in its nature to that of the confluent; but this last is always accompanied with considerable risk, the degree of which is ever in proportion to the violence and permanence of the fever, the number of pustules on the face, and the disposition to putrescency which prevails.

When there is a great tendency this way, the disease usually proves fatal between the eighth and eleventh day; but in some cases death is protracted till the fourteenth or sixteenth. The confluent small-pox, although it may not prove immediately mortal, is very apt to induce various morbid affections.

Both kinds of small-pox leave behind them a predisposition to inflammatory complaints, particularly to ophthalmia and pneumonia; and they not unfrequently excite scrofula into action, which might otherwise have lain dormant in the system.

The regular swelling of the hands and feet, upon that of the face subsiding, and its continuance for the due time, may be regarded in a favorable light. Violent eruptive fever, delirium, stupor, severe vomiting, dyspnoea, sudden disappearance of the eruption, subsidence of the swelling of the face or extremities, suppression of saliva, or depression of the pustules, followed by much prostration of strength, pallor of the skin, great anxiety, syncope, or convulsions, are appearances which denote the greatest danger. The disease in its progress assuming a ma-



lignant character and typhoid type, and the patient becoming livid, or being interspersed with petechiæ, portend a fatal termination.

The dissections which have been made of confluent small-pox, have never discovered any pustules internally on the viscera. From them it also appears, that variolous pustules never attack the cavities of the body, except those to which the air has free access : as the nose, mouth, trachea, the larger branches of the bronchiæ, and the outermost part of the meatus auditorius. In cases of prolapsus ani, they likewise frequently attack that part of the gut which is exposed to the air. They have usually shown the same morbid appearances inwardly as are met with in typhus gravior, where the disease has been of a very malignant nature. Where the febrile symptoms have run high, and the head has been much affected with coma or delirium, the vessels of the brain appear, on removing the cranium and dura mater, more turgid, and filled with a darker colored blood than usual, and a greater quantity of serous fluid is found, particularly towards the base of the brain. Under similar circumstances the lungs have often a darker appearance, and their moisture is more copious than usual.

*Treatment.*—The general principles of treatment in small-pox, have for a long time, been misunderstood, and measures were consequently adopted which greatly increased the mortality of this form of disease. Dr. Thomson very justly remarks, that the fashionable mode of treatment, (physicing, starving, and freezing of the patient,) is contrary to common sense, as it weakens the friend and strengthens the enemy. In the distinct small-pox, very little is wanting or requisite, more than to assist nature to drive out the canker and putrefaction by keeping the determining powers to the surface, in which case, there will be no danger. A grand principle in the treatment of small-pox, as well as in all other exanthemes, or eruptive diseases, is to adopt a fashionable phrase, to guard well the fever. It being the polar-star, we should never lose sight of it, our efforts should be directed to encourage and treat it as a friend. "It is by means of the fever," says Dr. John Mason Good, "that the disease works its own cure, for it is hereby that a general determination is made to the surface, and the morbid poison is thrown off from the system." And the same author has declared, that "the fever is the natural mode of cure." Then let the febrile symptoms be encouraged after the following manner : when the symptoms make their appearance, give a dose of composition powder, and canker teas, cleanse well the stomach, and then the bowels by mild aperients, assisted by injections of raspberry and slippery elm, with a small portion of cayenne. The vapor bath and light emetics must now follow, with some diffusible stimulants. The sage, catnep, pennyroyal, balm, &c., will greatly assist in keeping up a perspiration. As soon as you get a free perspiration the disorder will soon show itself upon the surface ; and by continuing to keep the determining powers to the surface, nature will take a regular course and soon expel the morbid matter and leave the constitution unimpaired.

In confluent small-pox, particularly where there is a putrid tendency, the practice should be persevered in until the patient is out of danger. And if the eruptions after having made their appearance strike in sud-

denly, a course of medicine must immediately be given, and repeated if necessary. If the patient is troubled with diarrhœa, it will be necessary to stop it immediately, for it will certainly produce dangerous debility. If the eyes should become much affected, they should be washed and bathed regularly in bayberry tea; if they should not be attended to, blindness may be the consequence.

Light nourishing food may be taken as freely as the patient may want it. Keep the bowels open, the determining powers to the surface, and nature will work the cure.

## OF INOCULATION.

EXPERIENCE has taught us that by applying variolous matter to a scratch or wound, so as to occasion absorption, we shall in general procure fewer pustules and a much milder disease than when the small-pox is taken in the natural way.

Notwithstanding these evident advantages, objections have been raised against inoculation, on the score that it exposes the person to some risk, when it is possible he might have passed through life without being attacked by the disease in question; but in reply it may be urged, that he will be exposed to much greater danger from the intercourse which he must have with his fellow-creatures, by taking the disorder in the natural way.

In objection to inoculation, instances have been adduced to support the probability of a person's being liable a second time to the small-pox, when produced at first by artificial means; but such instances are very rare indeed, and we may safely conclude, that in most of those cases the matter used was not variolous, but that of some other eruptive disorder, such as the chicken-pox; which, when severe, may be mistaken for the small-pox by those who are not very conversant with the difference between them.

It has been computed that a third of the adults die who take this disease in a natural way, and about one-seventh of the children; whereas of those who receive it by inoculation, and who are properly treated afterwards, the proportion probably is not greater than one in five or six hundred.

Although inoculation for the small-pox may have been beneficial to individuals by greatly lessening the chance of death, yet it may safely be asserted that it has proved of no benefit to the community at large, but the reverse; which is evident by the bills of mortality, as they clearly prove that the disease of small-pox has increased in England since the introduction of inoculation, in the proportion of nineteen in every hundred.

This has arisen in a great measure from the want of some laws of exclusion analogous to those of quarantine, by which those who produce the disease by inoculation should be prohibited from exposing the inocu-

lated persons in the way of such as are liable to the infection. A recent decision in the Court of King's Bench, however, has shown, that such an exposure, where it produces the disease in others, is a misdemeanor by common law, and that those who thus trespass on the community, and are guilty of the act, are liable to imprisonment.

The practice of inoculating is generally supposed to have been introduced into Britain from Turkey, by Lady Mary Wortley Montague, about the year 1721, whose son had been inoculated at Constantinople during her residence there, and whose infant daughter was the first that underwent the operation in that country. Some letters, however, of Dr. Williams, Mr. Owen, and Mr. Wright, which may be seen in the *Philosophical Transactions* for the year 1722, assert that inoculation was well known in the south of Wales at that time, and had been of long standing. It seems likewise to have been practiced in the Highlands of Scotland, before its introduction into England.

Mr. Mungo Park, in his travels into the interior of Africa, found that inoculation had long been practiced by the negroes on the Guinea coast, and nearly in the same manner, and at the same time of life, as in Europe.

Where inoculation really originated is a matter of doubt, although it has been ascribed to the Circassians, who employed it as a mean for preserving the beauty of their women. It is more than probable that accident suggested the expedient among the different nations to whom the small-pox had long been known, independently of any intercourse they had with each other: and what greatly adds to the probability of this conjecture is, that in most places where inoculation can be traced back for a considerable length of time, it seems to have been practiced chiefly by old women before it was adopted by regular practitioners.

Many physicians held the practice of inoculation in the greatest contempt at first, from its supposed origin; others again discredited the fact; while others, on the testimonies of its success in distant countries, believed in the advantages it afforded, but still did not think themselves warranted to recommend it to the families they attended; and it was not until after the experiment of it had been made on six criminals, (all of whom recovered from the disease and regained their liberty,) that it was practiced in the year 1726 on the royal family, and afterwards adopted as a general thing.

To insure success from inoculation, the following cautions should be strictly attended to:—

1st, That the person should be of a good habit of body, and free from any disease, apparent or latent, in order that he may not have the distemper and a bad constitution, or perhaps another disorder, to struggle with at the same time.

2dly, To enjoin a temperate diet and proper regimen.

3dly, That the age of the person be as little advanced as possible; but not younger, if it can be avoided, than four months.

4thly, To choose a cool season of the year, and to avoid external heat, either by exposures to the sun, sitting by fires, or in warm chambers, or by going too warmly clothed, or being much in bed.

5thly, To take the matter from a young subject who has the small-

pox in a favorable way, and who is otherwise healthy and free from disease; and when fresh matter can be procured, to give it the preference.

Where matter of a benign kind cannot be procured, and the patient is evidently in danger of the casual small-pox, we should not, however, hesitate a moment in recommending inoculation from any kind of matter that can be procured, as what has been taken in malignant kinds of small-pox has been found to produce a very mild disease. The mildness or malignity of the small-pox appears, therefore, to depend little, if at all, on the inoculating matter. Variolous matter, as well as the vaccine, by being kept for any length of time, particularly in a warm place is apt, however, to undergo a decomposition by putrefaction, and then another kind of contagious material has been produced.

In inoculating, the operator is to make the slightest puncture or scratch imaginable in the arm of the person, rubbing that part of the lancet which is besmeared with the matter repeatedly over it, by way of ensuring the absorption; and in order to prevent its being wiped off, the shirt-sleeve ought not to be pulled down until the part is perfectly dry.

In preference to either puncturing the arm, or scratching it in a direct line, it has been recommended to introduce the lancet armed with the matter obliquely beneath the cuticle, so as to wound very slightly, and occasion little or no flow of blood. This mode may probably be preferable; but in withdrawing the point of the lancet, it will be right to press the wound with the finger, that the parts in contact with the matter may wipe it off the lancet, and thereby secure the success of the operation. When inoculation is performed in any of these ways, the application of a plaster or bandage will be unnecessary.

The matter of small-pox must be applied to a wound in order to induce the complaint. Dr. Rush informs us, he could not induce the small-pox by rubbing the matter on the entire skin; and he likewise mentions, that a negro girl took some variolous matter mixed with a dose of physic, which produced no sensible effect.

A singular circumstance attending inoculation is, that when this fails in producing the effect, the inoculated part nevertheless sometimes inflames and suppurates, as in cases where the complaint is about to follow; and the matter produced in such cases is as fit for inoculation as that taken from a person actually laboring under the disease. The same happens very frequently in inoculation for the cow-pox.

If, on the fourth or fifth day after the operation, no redness or inflammation is apparent on the edges of the wound, we ought then to inoculate in the other arm in the same manner as before; or, for greater certainty we may do it in both.

Some constitutions are incapable of having the disease in any form. Others do not receive the disease at one time, however freely exposed to its contagion, even though repeatedly inoculated, and yet receive it afterwards by merely approaching those laboring under it. Dr. Huxham makes mention of cases of this nature. His words are, "I know an old nurse, and one apothecary, who for many years attended persons, and a great number too, in the small-pox, and yet never had them; nay,



many that have industriously endeavored to catch the infection, by frequenting the chambers of the sick, have done it without effect; and yet some of these persons, some months or years after, have been seized with the small-pox."

On the coming on of the febrile symptoms, which is generally on the seventh day in the inoculated small-pox, the patient is by no means to be suffered to take to his bed; but, on the contrary, must be constrained to keep up, and to be as much in the cool air as possible: and if thirsty, he may partake freely of some cooling antiseptic drink. As the number of pustules would probably be much increased by lying with another person, the patient should always have a bed to himself.

From the time that the matter is introduced into the system to the appearance of the eruptions, it will be necessary to observe a total abstinence from all animal food, and to give some gentle purgative every second or third day, if the person is of a gross habit; and on the intervening ones, he may make use of the cholera syrup daily.

The mode of treating the small-pox being the same, whether it arises naturally or from inoculation, a reference must be had to the plan which is laid down in the preceding pages.

Various plans have been proposed with a view wholly to banish the casual small-pox. Dr. Haygarth has bestowed much attention on this subject; and were the regulations pointed out by him to be rigidly enforced, there is reason to believe they would be found sufficient for the purpose. A surer and more effectual way, however, to eradicate the disease, is by inoculating with vaccine matter every adult who never has had the small-pox; as likewise every child soon after its birth.

It has frequently been attempted to communicate the small pox and measles to quadrupeds by inoculation, but in vain.

## VARIOLÆ VACCINÆ, OR COW-POX.

In many of the dairy counties it had been long known that the cows are liable to an eruption on their paps or udders, which was occasionally communicated to the hands or arms of those who milked them, producing an ulcer, and some degree of fever; and it had been observed by the people of those counties, that those who had gone through this disease, known by the name of cow-pox, were not liable to the small-pox.

The disease had not, however, undergone any medical investigation, until the late Dr. Jenner, then of Berkley, in Gloucestershire, paid particular attention to it. He very satisfactorily ascertained that it was a much milder disease than the small-pox, and that the fact was true, that in general it secured those who had been infected with it from afterwards being liable to variolous infection. He also observed that the vaccine-pox is not infectious but by inoculation; and that on this account it might be inoculated in a family without endangering others: a

circumstance of the greatest importance. On the suggestions of Dr. Jenner, many surgeons were induced to adopt the practice of substituting the one disease for the other, and its efficacy is in most cases now fully established.

With respect to the origin of the disease in the cow, we are informed by Dr. Jenner, that he traced it to the diseased heels of horses which had been affected with the grease; and by the person appointed to apply the dressings to them not paying a due attention to cleanliness, and incautiously bearing his part in milking the cows, with some particles of the infectious matter adhering to his fingers, he has communicated the disease to them. From numerous experiments made, however, at an early period, by the late Dr. Woodville, and by Mr. Coleman, Professor at the Veterinary College, with the matter of grease, taken in the various stages of that complaint, no such effect has been produced upon cows. Neither were inoculations with this matter, nor with several other morbid secretions in the horse, productive of any effects upon the human subject, which by no means accord with the facts adduced by Dr. Jenner on this point.

Some communications through the medium of the Medical and Physical Journal, in consequence of still later experiments, seem, however, to give support to Dr. Jenner's opinion as to the origin of the disease.

On its first investigation, some circumstances lead to the supposition that the cow-pox and small-pox were originally one and the same disease; the latter being derived from the animal at some remote period, and having undergone, in the lapse of years, and by the influence of various constitutions, the changes we now experience. Subsequent facts have, however, invalidated this opinion.

From various experiments, it appears that the vaccine disease and the small-pox are not susceptible of intermixture, but that each preserves its distinct character under all circumstances. At the Small pox Hospital it has been noticed, that when the vaccine and variolous fluids are mixed together, and thus inserted, sometimes the vaccine pustule, at others the variolous, has been produced, each of them retaining its characteristic marks throughout. Again, it has been found, that when the two fluids are inserted separately, and so near together that the two pustules which follow spread into one, by inoculating with the fluid taken from one side of it, the vaccine pustule alone will be produced, while the fluid taken from the other excites the genuine variolous pustule, with the general eruption of small-pox on the body. Another point of dissimilarity between the variolous and vaccine diseases, is this: the inoculation of the former we well know supersedes the natural disease many days after exposure to infection.

The effect produced by submitting persons to the influence of variolous and vaccine matter at the same time, is, that they both prove effective; for the vaccine vesicle proceeds to its acme in the usual number of days, and the maturation of the variolous pustules is attended with a pustular eruption on different parts of the body: but when variolous matter is not inserted until the ninth day after the inoculation with vaccine matter, the action of the variolous seems to be wholly precluded.

The variolous and vaccine fluids, inoculated about the same time, restrain the action of each other. The vaccine vesicle, in this case, is smaller, and proceeds more slowly to its maturity, and the variolous pustules are small, hard, and shining, producing only a small particle of matter at their apices.

The nipples of the cow being once affected, the disorder is communicated to the dairy-maids, and other assistants employed in milking, and by them it is spread through the farm, until at last most of the cattle experience its consequences.

The disease appears on the nipples of the cows in the form of irregular pustules, which on their first appearance are commonly of a color somewhat approaching to livid, and are surrounded by an erysipelatous inflammation, according to the report of Dr. Jenner; but Dr. Woodville seems to think that it is rather an indurated tumefaction of the skin which surrounds the pustules, than an inflammation of an erysipelatous nature. Unless proper remedies are applied in time, these pustules soon degenerate into phagedenic ulcers, which prove extremely troublesome; the animals then become much indisposed, and the secretion of milk suffers a considerable diminution.

Inflamed spots now begin to appear on different parts of the hands and wrists of the domestics employed in milking, which run on quickly to suppuration, assuming at first the appearance of small vesications produced by a burn. Most commonly they come out about the joints of the fingers, and at their extremities; but whatever parts are affected, if the situation will admit, these superficial suppurations put on a circular form, with their edges more elevated than their centre, and of a color distinctly approaching to blue. In consequence of absorption, tumors appear in each axilla, the system becomes affected, the pulse is quickened, and rigors, with general lassitude and pains about the limbs and loins, with a vomiting, come on. In some instances the head is much affected, and a delirium arises.

These symptoms, varying in their degrees of violence, usually continue for three or four days, leaving ulcerated sores about the hands, which from the sensibility of the parts are very troublesome, and commonly heal slowly, becoming not unfrequently phagedenic, like those from which they sprung.

The lips, nostrils, eye-lids, and other parts of the body, are likewise affected sometimes with sores, in consequence of being heedlessly rubbed or scratched with the patient's infected fingers.

Dr. Jenner informs us, that he had never met with any case of the cow-pox, either taken naturally, or produced artificially, which proved fatal; but by Dr. Woodville we are told, that out of five hundred cases of inoculated cow-pox under his care, one proved fatal, which was a child at the breast, on the eleventh day after the matter had been inserted in the arm.

From that occurrence, and a few cases in which the febrile symptoms ran high, this gentleman was at first very adverse to the vaccine inoculation; but from further trials he latterly gave it, with almost every other practitioner, a decided preference.

The few instances of death which have occurred from vaccine inocu-

lation, since it has been more generally practised, may probably be referred with much justice to some unknown peculiarities of the constitution; to intervening disorders independent of the vaccine; and to inflammation excited by accidental causes in young children, especially when they have been ill-fed and badly nursed—circumstances not uncommon among very poor people.

When the pustules are numerous, as sometimes happens where the disease has been received immediately from the cow, a considerable degree of fever attends; but when it has arisen from inoculation, few or no pustules are to be observed, except immediately round the wound in the arm; and little or no inconvenience is experienced.

A more general knowledge of the disease than what we had at first, has ascertained it to be an undoubted fact, that the vaccine virus is greatly modified, and rendered much milder, by passing through different habits; and that although the cow-pox has proved in many instances a severe disorder in those who received the infection immediately from the animal, still in a few instances only have the symptoms run high, or has the least inconvenience been experienced, where proper matter, taken from the human subject, was used for inoculation.

In the few cases which have been brought forward, where a numerous eruption, preceded by a fiery redness, took place, we should attribute it to something wrong in the habit of body: to the intervening of some other eruptive disease; or possibly to the having inoculated with matter which had undergone a decomposition, in consequence of putrefaction, or some other cause not obvious.

The vaccine virus is certainly of a very singular nature, inasmuch as that a person who has been infected by it, is generally found to be forever after secure from the infection of the small-pox; neither exposure to variolous effluvia, nor the insertion of the matter into the skin, being capable of producing the disease. Many direct experiments, made by innumerable practitioners, prove that the susceptibility of the small-pox is in general totally destroyed by inoculating with the vaccine matter. The permanency of the effect was indeed a matter of some doubt, but that is now fully established. It appears from the Report of the Small-pox Hospital in London, that up to December, 1802, eleven thousand eight hundred patients and upwards have been vaccinated, of which number twenty-five hundred were afterwards *proved* to be secured from the natural small-pox, by receiving a further inoculation with small-pox matter, while they were, at the same time, exposed in a hospital full of its infection, without effect. It was said at first, that although the cow-pox destroyed the susceptibility of the small-pox, still it possessed not the same power with regard to itself, as a person might have the disease more than once. Instances certainly have been adduced of the cow-pox taking place a second time; but they are of very rare occurrence, and should be looked on as irregular. The same has happened with the small-pox.

In Dr. Jenner's first treatise he mentions that the small-pox is not always a security against the cow-pox, and that although the susceptibility of the virus of the cow-pox is for the most part lost in those who have had the small-pox, yet in some constitutions it is only partially de-



stroyed, and in others it does not appear to be in the least diminished. A more intimate knowledge of the disease has convinced us of the fallacy of this opinion.

Soon after Dr. Jenner's first publication on the vaccine disease, a few instances were adduced, tending to invalidate his supposition of the preventive power of the cow-pox with regard to variolous infection; but these he considers to have been cases of a spurious disease, and therefore not affecting his general conclusion.

In using this term, he does not mean, however, to imply that there is a true and false cow-pox, but merely to express an irregularity or difference from that common form and progress of the vaccine pustule from which its efficacy is inferred. Those who perform vaccination ought, therefore, to be well instructed, and should have watched, with the greatest care, the regular process of the pustule, and learnt the most proper time for taking the matter.

A few cases of still later occurrence have also been brought forward by Mr. Goldson, of Portsmouth, and others, with the view of proving that the inoculated cow-pox is not a permanent security against the infection of the small-pox; but a failure in one or two cases out of more than thirty thousand, although ever so well substantiated, should be considered in no other light than as a casual irregularity, upon which no solid determination can or ought to be grounded. Instances of the like nature have been known to occur likewise among persons inoculated with variolous matter, and when they are met with, ought to be looked on as anomalous.

There can be little doubt, however, that some of the failures are to be imputed to the inexperience of the early vaccinators; and it is by no means unreasonable to expect, that further observation will yet suggest many improvements that will reduce the number of anomalous cases, and furnish the means of determining with greater precision when the vaccine disease has been effectually received.

Persons who have been vaccinated and passed through the cow-pox with all the usual accompanying symptoms, and who have afterwards taken the small-pox, of which a very few instances may have happened, have generally imperfect pustules, which die away in a few days, without exciting any constitutional complaint; but the matter taken from these pustules will communicate the small-pox. This circumstance has been brought forward by the anti-vaccinists, as a proof that persons who have had the cow-pox may afterwards take the small-pox by inoculation and otherwise: not making the proper distinction between local and constitutional infection, or perhaps not understanding how any one can communicate a disease to others with which he is not himself infected.

We are informed by Dr. Jenner that the sources of a spurious cow-pox are as follows:

1st, That arising from pustules on the nipples or udder of the cow, which pustules contain no specific virus.

2dly, From the matter (although originally possessing the specific virus) which has suffered a decomposition, either from putrefaction or from any other cause less obvious to the senses.

3dly, When the matter is taken from an ulcer in an advanced stage, which ulcer arose from a true cow-pox : and,

4thly, He supposes a spurious disease to arise from matter produced on the human skin, from contact with some peculiar morbid matter generated by a horse.

The characteristics of the true cow-pox, are as follow, viz : a circumscribed, circular, elevated eruption, surrounded by a red halo or efflorescence ; smooth surface ; brown, black, or mahogany and tamarind-stone-colored, long-adhering scab.

From a chemical analysis of vaccine matter by some French physicians, it was found to consist of water and albumen.

The succeeding arguments have been urged in favor of inoculation for the cow-pox over that for the small-pox.

1st, Of several thousand persons who have had the inoculated cow-pox, only one or two have died.

2dly, Very few well attested instances have been produced out of many thousands of the above persons, known to have had the inoculated vaccine-pox and who were subsequently inoculated for the small-pox, of this disease being afterwards taken ; although many of these were also exposed to the infectious effluvia of the natural small-pox. And, traditionally, this fact has been established time immemorial with regard to the casual cow-pox.

3dly, It may be safely affirmed, that the inoculated cow-pox is generally a much slighter disease than the inoculated small-pox ; and that the proportion of severe cases in the latter is to the former as at least ten to one.

4thly, It does not appear that the genuine vaccine-pox can be propagated, like the small-pox, by effluvia from persons laboring under it. Hence, if the vaccine inoculation should be universally instituted in place of the small-pox, it is reasonable to conclude, that this most loathsome and fatal malady will be extinguished.

5thly, It does not appear that the vaccine poison, like that of the small-pox, can be conveyed so as to produce the diseases indirectly from diseased persons, by adhering to clothes, furniture, bedding, letters, &c. Hence, no danger of its propagation in these channels is to be apprehended from the universal practice of the inoculation of the cow-pox.

6thly, It has been found, that a person whose constitution has distinctly undergone the vaccine disease, is in future unsusceptible of the same disorder. Hence no objection can be made to the new inoculation, as was once urged, on account of its being believed, that by the commutation of the small-pox for the vaccine-pox, an eruptive disease would be introduced, to which the same person would be repeatedly liable.

7thly, It does not appear that those who have already gone through the small-pox are susceptible of the vaccine disease, as was at first believed. Hence no objection can be urged on the score of persons who have already gone through the small-pox, being liable to a new infectious disease, by the introduction of the vaccine inoculation.

8thly, Experience shows, that there is no reason to apprehend the

smallest chance of deformities of the skin from the vaccine inoculation.

9thly, The extensive practice of the vaccine inoculation, and the accounts of the disease in the casual way, do not show that any other disease will be excited subsequently which is peculiarly imputable to the new practice.

On a review of these arguments, founded on facts, there can remain no doubt that the vaccine inoculation will soon wholly supersede and do away the variolous. Could all parents be persuaded to inoculate their children with the vaccine matter soon after birth, the small-pox might be entirely eradicated in time. The introduction of this species of inoculation generally throughout both the army and navy, and its extension to France, Spain, Germany, Russia, and every part of the Continent, as well as to both the Indies, fully stamp its value and efficacy, and give us reason to hope that it will shortly be adopted by every nation of the earth with whom we have the least communication. Vaccination has, indeed, penetrated to the remotest corners of the globe; and wherever it has been introduced, the increasing experience of every year has only served to confirm pretty generally a confidence in its efficacy. It has been recommended and adopted by far the greatest and most respectable part of the profession, every where; but by a few individuals it has been obstinately opposed through interested motives.

In inoculating for the vaccine disease, we should carefully attend to the following circumstances:

1st, That the matter should not be taken later than the ninth day of the disease.

2dly, That the fluid should be perfectly transparent, as it is not to be depended upon if it has become in any degree opaque.

3dly, That the matter, if not used immediately, should be allowed to dry gradually and thoroughly before it is laid by for future use.

4thly, That the punctures can scarcely be made too superficial, and on no account should more than one be made in each arm.

With respect to the operation of vaccination, it will be important to ascertain that the vesicle has not acted locally, but effected the desired change on the constitution; hence, has originated the practice of testing by re-vaccinating during every period of the progress of the vaccine vesicle.

From the Report of the physicians of the Vaccine-pox Institution, it appears that the matter of a single pustule, being mixed with one quarter of an ounce measure of warm water, such diluted matter excited as distinct a vaccine-pox by inoculation as an equal quantity of undiluted matter. A pox so excited was not attended with less inflammation or constitutional affection, than that excited by a large quantity of undiluted matter; which points out an easy method of inoculating several persons from a single vaccine-pock—a great convenience indeed, when the poor to be inoculated at one time are very numerous.

And we make the suggestion—could not the matter be put to alcohol, and be thus suitably diluted, and never suffer a diminution of its quality!

*Treatment.*—But little need be appended in regard to remediate means, as the quality of treatment cannot vary from that laid down as a

guide in small-pox. The vapor bath, and if necessary, light emetics, composition, or sudorifics, and nourishing food, constitute every thing required.

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## CHICKEN-POX, COW-POX, AND MODIFIED SMALL-POX.

From the earliest periods at which small-pox was noticed, we read of a mild eruptive disease, liable to be confounded with it, but not preventing it; and consequently demanding attention with reference to diagnosis. This has gone by the several names of *chrystalli*, *variola lymphaticæ*, *spuriæ*, *volaticæ*, and *pusillæ*. By Reverinus it was called *varicella*. Morton adopted from the vulgar, and introduced into medical language the term *chicken-pox*. The descriptions of this disease, which have been given by different authors, and their pathological views concerning it and its relation to small-pox, differ materially from each other. It is clear, that acknowledging the necessity of diagnosis, they have yet failed in establishing it satisfactorily; for after the lapse of nine hundred years, the subject is declared to be so obscure as to demand fresh investigation.

For the last fifty years, authors have been in the habit of drawing their notions concerning *varicella* from the paper published by Dr. Heberden, in the first volume of the Transactions of the College of Physicians of London. The points of doctrine which he principally set forth were, that the chicken-pox arose from a specific contagion, affected the same individual but once during life, afforded no protection from small-pox, and was capable of being communicated by inoculation. It does not appear, indeed, that he ever witnessed inoculation in this disease; but in his description it is implied that it has been so propagated, although by mistake, and that an eruption followed which has passed with inexperienced and hasty observers, for the small-pox, from which, however, it does not secure the constitution. Dr. Willan, in 1806, bore testimony to the general accuracy of Dr. Heberden's description. He detailed the appearance of the eruption with more precision, but coincided in opinion that it is a contagious disease, affording no protection from small-pox, and communicable by inoculation.

More recent observations have tended to show that some mistake has crept into the views of these authors concerning the pathology of *varicella*. It has been rendered highly probable that the genuine *varicella* is not communicable by inoculation; but it has at the same time been shown, that many cases of *supposed* *varicella* do produce a disease by inoculation, which is not chicken-pox, but small-pox. Reasoning from these data, some modern authors have retained the notion of the specific disease *varicella*, but have given it new characters; while others have revived a doctrine which prevailed very generally in former times, and was distinctly avowed by Sauvages; *viz.* that chicken-pox and small-pox originate in one and the same contagion, and that *varicella* is indeed what its name imports, a mild, imperfect, or *modified* form of *variola*.



In support of the latter opinion, many ingenious arguments have been brought forward in a work, which has certainly thrown much light upon the history of the eruptive diseases, connected in their origin or symptoms with variola. The true solution of the difficulties which have encumbered this branch of pathology, appears to be this. There are two diseases distinct from each other in their origin and character, both of which have been designated by the title of *varicella*. The one is the *varicella lymphatica*, the true or genuine varicella, as described by Mr. Bryce. The other is the *varicella variolodes* partaking more decidedly of the nature of small-pox, and from which true small-pox may be obtained by inoculation. These distinctions I shall keep before me in the remarks now to be offered.

The eruptive fever of *varicella lymphatica* is very slight and rapidly followed by an eruption which is distinctly *vesicular* from the earliest period. The vesicles when first seen are about the size of a split pea, perfectly transparent, and covered only by a cuticle as thin as that raised by a scald or blister. On puncturing them a clear lymph is evacuated, and they neither exhibit a cellulated structure nor a central depression. The eruption commences on the breast and back, and subsequently extends to the face, scalp, and extremities. On the second and third days of eruption, an irregular circle of inflammation surrounds each vesicle. The disease is attended, especially in children, with an incessant tingling or itching, which leads them to rub off the tops of the vesicles, so that the characteristics of the disorder are often destroyed at an early period. Even if the vesicle remains unbroken, the contained fluid becomes opaque about the fourth day, at which time the disease is in many cases with difficulty distinguished from small-pox by the eye alone. The vesicles are nearly always distinct. One case of confluent varicella, however, has been described by Mr. Ring. On the fifth day the vesicles appear covered with slight crusts which are yellowish, scaly, and irregular, lying flat upon the surface of the body. In a very few instances only, have they been succeeded by pits. Dr. Willan and others have noticed that the vesicles of the chicken-pox do not all appear in one day, but follow each other in successive crops. This, however, cannot be urged as a diagnostic mark of the disease, for it occurs also in the modified small-pox.

Such are the distinguishing characters of *varicella lymphatica*. If the eruption, instead of being vesicular, exhibits in its early stages the appearance of indurated basis—if the vesicles have a central depression—if, after discharging their contents, on the third day, a firm tubercle be found below—and if the crusts which succeed are compact, defined, of a clear horny smoothness, and elevated, the disease was the *varicella variolodes*, and arose from the contagion of small-pox. All authors are agreed that the former, or genuine varicella, affords no protection from small-pox. It is generally admitted also that it sometimes spreads epidemically (as in schools;) and hence some are inclined to attribute it to *specific contagion*. It is not, however, contended by the best authors, that this contagion is communicable by inoculation, or that the disease affects an individual once only during life. I am not aware that varicella, in this its vesicular or genuine form, has ever been met with in adult

persons. It would appear as if the delicate cuticle of infantile life was indispensable to its development.

See treatment of cow-pox.

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## RUBEOLA, OR MEASLES.

This disease is an inflammatory infectious fever, attended by a cough, sneezing, defluxion of thin humors from the eyes and nose, and a determination of acrid matter to the surface of the body, showing itself in red spots over every part of it, but which never come to any suppuration, as in the former disorders, but go away in a small mealy desquamation of the cuticle after a few days' continuance.

In symptoms of nosology several varieties of the measles are mentioned, but they may all be comprehended under two heads; the benign and malignant; but the former attended with more or less of the symptoms of general inflammation, the latter accompanied by a putrid diathesis and typhoid fever.

The scientific Willan divides rubeola into three species, viz. rubeola vulgaris, rubeola sine catarrho, and rubeola nigra; in the latter of which the papule suddenly assume a black or dark purple color.

Scarlatina sometimes resembles the measles so exactly as not to be easily distinguishable; though this is a matter of great importance because the method of cure in the two diseases is extremely different. The redness of the scarlet fever is more equally diffused than in the measles, and is not in distinct spots with the natural color of the skin interposed; yet in a few cases it has been observed so. In the measles the eruption rises more above the skin, and occasions a manifest roughness to the touch, which is hardly observable in the scarlet fever, except a very little roughness sometimes in the arms. In the scarlet fever there is seldom a severe cough; the eyes do not water much, and the eyelids are not red and swollen; all which rarely fail to attend the measles. The time of the eruption is likewise different, for it appears in the scarlet fever both in the face and arms on the second day; but in the measles it begins only about the third day to be visible on the chin and breast, and does not come to the arms and hands till the fourth or fifth day.

The measles may prevail at all seasons of the year as an epidemic, but the middle of winter is the time they are usually most prevalent; and they attack persons of all ages, but children are most liable to them. They prove rather unfavorable to such as are of a plethoric or scrofulous habit. Like the small-pox, when genuine, they rarely affect persons but once, their contagion appearing to be of a specific nature. A recurrence of the measles has been disputed by some, but a number of examples are recorded by different writers where the measles took place twice.

From a number of cases lately observed at New York, when the mea-

sles were very prevalent there, it appears that spurious forms of the disease, insufficient to protect the system from subsequent attacks, occur in a manner very analogous to the spurious appearances of the small-pox and of the variolæ vaccinae. For many persons, who on former occasions of the measles prevailing, and after exposure to their contagion, had exhibited certain irregular appearances of febrile, catarrhal, and eruptive symptoms, mistaken for the true disease, were afterwards attacked with measles in an exquisitely genuine form. The fact is likewise noticed by Dr. Willan, and he mentions that the rubeola without catarrh appears to be an unusually mild form of the disorder, which does not destroy the susceptibility to an attack in future. Two instances of its recurrence happened among his own children, at an interval of two years. In a later publication he informs us, that he has since seen other cases of the same kind, wherein the efflorescence without fever or catarrhal symptoms having declined, there appeared on the fourth day from its commencement, a new efflorescence, and violent disorder of the constitution.

The eruption of benign measles is usually preceded by a chilliness and shivering, succeeded by heat, thirst, anxiety, pains in the head, back, and loins, heaviness and redness of the face and eyes, with an effusion of tears, swelling of the eyelids, nausea, and probably a vomiting of bilious matter; and with these symptoms there are a dry cough, a hoarseness, hurried respiration, difficulty of breathing, frequent sneezing, and a discharge of acrid water from the nostrils. The pulse is at the same time frequent and strong.

In alarming cases, spasms of the limbs, subsultus tendinum, delirium, or coma, supervene. This last symptom, however, so frequently attends the eruptive fever of measles, that by some practitioners it is regarded as one of its diagnostics.

In measles, as in other febrile diseases, the symptoms generally suffer some remission towards the morning, returning however, in the evening with increased severity.

About the third or fourth day small red spots, somewhat similar to flea-bites, appear in clusters about the face, neck, and breast, and in a day or two more the whole body is covered with them. They do not rise into visible pimples, but by the touch are perceived to be a little prominent.

The febrile symptoms do not, however, abate on the appearance of the eruption, as happens in the small-pox; but on the contrary are usually much increased, and they do not cease till after the desquamation takes place. The cough, hoarseness, difficulty of breathing, and defluxion from the eyes and nostrils, seem likewise greatly aggravated.

On the fifth or sixth day the spots from a vivid red are changed to a brownish hue, and they begin to dry away about the face, never having proceeded to any kind of suppuration; about the eighth or ninth day they disappear on the breast and other parts of the body, with a mealy desquamation of the cuticle. About this period it is no uncommon occurrence for a diarrhœa to ensue.

The malignant form of the disease is accompanied with typhus fever, and with petechiæ and other signs of putrescency, as enumerated under

that head. Moreover, the eruption appears more early, and all the concomitant symptoms are in an aggravated form. The fauces not unfrequently assume the same appearance as in cynanche maligna, probably from a combination of the two diseases. Some cases of this nature have lately fallen under my care, two of which proved fatal.

The febrile and other symptoms being mild, a gentle diarrhœa, a free and copious expectoration, a moisture on the skin at the appearance of the eruption, and an early and free desquamation, denote a favorable termination of the disease; but a high degree of fever, hot and parched skin, hurried and difficult breathing, flushed countenance, unusually hard pulse, the energy of the system not proving sufficient to throw out the eruption to the surface of the body, and the mucous membrane of the larynx, trachea, and bronchial ramifications being invaded therewith, as happens sometimes in scarlatina, ulcerated fauces, severe diarrhœa, the vomiting continuing after the eruption, great pain in the head and eyes after it, considerable degree of coma or delirium, the eruption becoming of a livid hue, with great prostration of strength, small intermittent pulse, petechiæ, and other marks of putrescency, point out the highest degree of danger. The existence of typhoid symptoms, along with a severe pneumonic affection, always increases the danger.

The consequences attendant on the measles are frequently more to be dreaded than the immediate disease; for although a person may get through it, and appear for a time to be recovered, still pulmonary consumption and hectic fever may afterwards arise and destroy him, or an obstinate ophthalmia will ensue.

Measles, as well as the small-pox, not unfrequently call into action a disposition to scrofula, where such happens to exist in the habit.

Another bad consequence of the measles is, that the bowels are often left by them in a very weak state; a chronic diarrhœa remaining, which has sometimes proved fatal. Dropsy has also been known as a consequence of measles.

A singular circumstance attending the contagion of the measles is, that if it be taken a sufficient time before inoculation for the small-pox, so that the eruption may commence before the variolous fever comes on, it stops the progress of the small-pox in the inoculated wound, and delays it till the fever of the measles has finished its career.

The morbid appearances to be observed on dissection of those who die of the measles, are pretty much confined to the lungs and intestines: the former of which always show strong marks of inflammation, with sometimes a tendency to sphacelus.

Where the patient dies under the eruption, the trachea and larger branches of the bronchiæ, as in the small-pox, are often found covered with it, which may account for the increase of the cough after the appearance of the eruption.

*Treatment.*—In a great many instances the measles make their attack in so mild a manner, that nature is abundantly able to throw off the disease without medical aid; but in other cases, the most active treatment will be requisite to save the life of the patient. An emetic is always useful in this form of disease, and particularly on its inception, and



should be succeeded by some mild aperients; and if the case is of an obstinate character, the vapor bath is indispensable. Our attention should be directed particularly to keeping the skin moist, which can be done by the use of diaphoretic teas, and occasionally the bath.

The bowels should be kept open by aperients and injections, the stomach well cleansed, diaphoretic teas should constantly be used, and in a large majority of severe cases, these alone will be sufficient aid. In formidable cases attended with coughing, difficult, anxious, or laborious respiration, the treatment must be directed accordingly; courses of medicine and our best expectorants must be put in requisition. When the eruption of measles disappears before the proper period, and great anxiety and delirium or convulsions supervene, lobelia emetics should be resorted to without delay, and the best diffusible stimulants.

Having gone through the treatment of measles, it only remains to be observed, that the disease may be propagated by inoculation, as well as the small-pox. Dr. Home, of Edinburgh, appears to have been the first who actually made the experiment, and from not being able to collect either matter, or a sufficient quantity of broken cuticle at the time of desquamation to produce the disease, he drew blood from the most superficial cutaneous vein, where the eruption was thickest. This received on cotton, he applied to a wound made on each arm of the person to be inoculated.

We are informed by him, that he inoculated twelve persons in this way, in all of whom the operation succeeded equal to his hopes. The eruptive fever generally commenced six days after inoculation, and the symptoms of the complaint were milder than they generally are in the casual measles. The fever was less severe, the cough either milder or wholly absent; the inflammation of the eyes was trifling; they watered, however, as much; and the sneezing was as frequent as in the casual measles; nor did bad consequences follow any case of inoculated measles. No affection of the breast remained after it.

The chief difference between the casual and inoculated measles seemed to be the absence of any pulmonic affection at all periods of the latter.

It appears that Dr. Home tried another experiment. He put a piece of cotton, which had remained in the nose of a patient under the measles, into that of a healthy child, making him breathe through the infected cotton; but the experiment, although repeated, did not succeed in inducing the disease.

Notwithstanding Dr. Home's success, still inoculation for the measles is seldom or never practiced. The few who have been induced to attempt it, have not, I believe, made quite so favorable a report of it; on the contrary, it has been said to have produced an aggravated disease.

When the measles prevail epidemically, it may be advisable to confine such children as have never had them, to a vegetable diet, giving a gentle aperient once or twice a week. Children thus prepared may be likely to have a mild disease.

## SCARLATINA, OR SCARLET FEVER.

THE characteristics of scarlatina, are as follow : The fever is the contagious synocha. About the fourth day of the disease the face is a little swelled ; a florid redness in large spots, afterwards coalescing, spreads partially over the skin, and in three days more, or so, goes off in furfureous scales, often succeeded by anasarca. The disease takes its name from the color of the patient's skin.

It is divided into three kinds : when unaccompanied with an ulceration of the throat, it is named scarlatina mitis, or simplex : when attended with such an affection, it is called scarlatina anginosa ; and when accompanied by symptoms of malignancy and putrescency, the term scarlatina maligna is applied to it. The two latter are, however, very frequently blended together.

It has been disputed, whether the scarlet fever and malignant sore throat ought to be esteemed different diseases, or only varieties of the same disease. In my opinion they are the same *in specie*, which is confirmed by our finding that they are both epidemical at the same time : even in the same family, where a number of children have been ill, either together, or immediately after one another, some have had the distinguishing symptoms of scarlet fever, and others of the malignant sore throat. Indeed it is now pretty generally admitted, that scarlatina, in all its forms, as well as the cynanche maligna, is produced by the same specific contagion.

There prevails much doubt amongst practitioners respecting the recurrence of scarlatina, some affirming that they have seen the disease recur in so manifest and unequivocal a form, as to leave no doubt in their minds as to its possibility, whilst others deny its ever affecting the same person a second time. Amongst the great number of persons who have been infected, few may be admitted, I think, to have gone through it a second time : but persons who have once been attacked with it, are less susceptible than those who never have had it.

Scarlatina attacks persons of all ages, but children and young people are most subject to it, and it appears at all seasons of the year ; yet it is more frequently met with towards the end of autumn, or beginning of winter, than at other periods, at which time it often becomes a prevalent epidemic.

Sudden changes from heat to cold, rainy weather, and indigestion, may predispose the body to be acted upon more readily by the infection.

As an epidemic, scarlatina does not always assume precisely the same appearance. This diversity depends probably, in part, upon the varying nature and constitution of scarlatina itself, independently of all extrinsic circumstances ; in part, upon certain contingencies, which are common to all the inhabitants of a whole district of country : such as the season of the year, the temperature of the air, the mildness or inclemency of the weather, together with other unknown qualities of the atmosphere ; and partly upon circumstances which apply to individuals subjected to the disease, their general habit of body and constitution, their particular state of health at the time of the attack, and their situation with respect to lodging, ventilation, and cleanliness.

We have, I think, just grounds for presuming that the different species of scarlatina, such as the simplex, angino, and maligna, all proceed from the same source, because, under the same roof, in large families, some individuals have the disease in one form, some in another, and about the same period. The difference may arise from constitutional circumstances, and not from any difference of the contagion. Scarlatina is of a very contagious nature. Simple contact, inoculation, and inhalation, are the different ways by which the infection, not only of scarlet fever, but of other contagious disorders, may be introduced into the human body. It is the opinion, however, of Dr. Blackburne, that the chief and only avenues to infection, in common, are the mouth and nostrils; and, consequently, that to guard against its communication through these channels, is the principal, or only necessary precaution. He thinks that the introduction of infectious particles into the human body by simple contact is impossible; and to support this, he brings forward the testimony of the late philanthropic Mr. Howard, who made no scruple of going into the open air to the windward of a person ill of the plague, and feeling his pulse; as likewise that of Dr. Russell, who personally attended the sick in the plague, and felt the pulses of a great number. That infection by the simple contact of poisonous matter on the skin is far less ready to excite disease than when applied, in the subtle state of vapor, to the more irritable surface of the nostrils and bronchiae, is indisputable; but that it proves universally innocuous under every state and condition of the body, may be doubted.

The disorders to which scarlatina bears the greatest resemblance are the measles and cymanche maligna; but from the former it may be distinguished by attending to the following characteristic marks, in addition to those noticed under the head of Rubecola.

The efflorescence in scarlatina generally appears on the second day of the fever: in the measles, it is seldom very evident until the fourth. It is much more full and spreading in the former disease than in the latter, and consists of innumerable points and specks under the cuticle, intermixed with minute papulae, in some cases forming continuous, irregular patches; in others coalescing into a uniform flush over a considerable extent of surface. In the measles the rash is composed of circular dots, partly distinct, partly set in small clusters or patches, and a little elevated, so as to give the sensation of roughness when a finger is passed over them. These patches are seldom confluent, but form a number of crescents, with large intervening portions of cuticle, which retain their usual appearance. The color of the rash is also different in the two diseases, being a vivid red in the scarlatina like that of a boiled lobster's shell; but in the measles a dark-red, with nearly the hue of a raspberry.

During their febrile stage, the measles are distinguished by an obstinate harsh cough, forcing up, in repeated paroxysms, a tough acrimonious phlegm; by an inflammation of the eyes and eyelids, with great sensibility to light; by an increased discharge from the lachrymal glands, sneezing, &c. Scarlatina is frequently attended with a cough, as also with redness of the eyes; but on minute observation, it will generally be found that the cough in scarlatina is short and irritating, with-

out expectoration; that the redness of the eyes is not attended with intolerance of light; that the ciliary glands are not affected; and that, although the eyes appear shining and watery, they never overflow. In scarlatina there is usually a peculiar sensation of anxiety, depression, and faintness, in all cases which are attended with fever; whereas in the measles symptoms of general inflammation are to be met with, except where the disease appears under a malignant form.

The following are the chief distinctions between scarlatina mitis and cynanche maligna. The fever in the former is somewhat of an inflammatory nature, and is unattended with sloughy ulcerations in the throat: in the latter these are always to be observed, the breath is very fetid, and the accompanying fever is of the typhoid kind. In scarlatina the is of a brighter scarlet, smooth, and always dry and hot; in cynanche maligna it is red and pimply, the pimples being redder than the interstices.

Scarlatina mitis, like all other fevers, begins with languor, lassitude, confusion of ideas, chills, and shiverings, alternated by fits of heat. The thirst after a little time becomes considerable, the skin dry, and the patient is often incommoded with anxiety, nausea, and vomiting.

The alvine evacuations are most commonly of the usual quantity; the urine is high-colored and turbid; and the pulse is weak, and varying from 100 to 120 strokes in a minute. In a few cases some slight affection of the fauces is perceived.

About the second or third day the scarlet efflorescence appears on the skin, which seldom produces, however, any remission of the fever. On the departure of the efflorescence, which usually continues out only for three or four days, a gentle sweat comes on, the fever subsides, the cuticle or scarf-skin falls off in small scales, and the patient gradually regains his former strength and health. Such is the disease in its mildest aspect.

In scarlatina anginosa the patient is seized not only with a coldness and shivering, but likewise with great languor, debility, and sickness, succeeded by heat, nausea, vomiting of bilious matter, soreness of the throat, inflammation and ulceration of the tonsils, uvula, and velum pendulum palati, a frequent and laborious breathing, and a quick, small, and depressed pulse. When the efflorescence appears, it brings no relief; on the contrary, the symptoms are much aggravated, and fresh ones arise.

In the progress of the disease, one universal redness, unattended however by any pustular eruption, pervades the face, body, and limbs, which parts appear somewhat swollen. The eyes and nostrils partake likewise more or less of the redness; and in proportion as the former have an inflamed appearance, so does the tendency to delirium prevail. There is moreover an acrid discharge from the nostrils, which excoriates whatever part it falls upon.

On the first attack of scarlatina anginosa, the tonsils and uvula are much inflamed, but the inflammation is soon succeeded by dark-colored sloughs, from three to five lines in diameter, or under the surrounding surface, and which conceal beneath them spreading gangrenous ulcers. These occasion the breath to be highly fetid. The patient is often cut off in a few days.



Even if he recovers, it will be by slow degrees, and probable anasarca swellings will ensue. In some instances, swellings of the submaxillary, parotid, or other small glands arise, and prove troublesome and tedious in suppurating.

The malignant form of the disease is characterized by the following appearances: its symptoms, on the first day, are nearly the same as in the scarlatina anginosa; but some of the following peculiarities are afterwards observable. The pulse is small, indistinct, and irregular; and the tongue, teeth, and lips, are covered with a brown or black incrustation. There is a dull redness of the eyes, with a dark-red flushing of the cheeks, deafness, delirium, or coma. The breath is extremely fetid; the respiration rattling and laborious, occasioned partly by a viscid phlegm clogging the fauces; the deglutition is constricted and painful; and there is a fulness and livid color of the neck, with a retraction of the head. Ulcerations are to be observed on the tonsils and adjoining parts, covered with dark sloughs, and surrounded by a livid base; and the tongue is often so tender as to be excoriated by the slightest touch. An acrid discharge flows from the nostrils, causing soreness, or chaps, nay, even blisters, about the nose and lips; the fluid discharged being at first thin, but afterwards thick and yellowish. The rash is usually faint, excepting in a few irregular patches; and all of it presently changes to a dark, or livid red color. It appears late, is very uncertain in its duration, and often intermixed with petechiæ. In some instances the rash disappears suddenly a few hours after it is formed, and comes out again at the expiration of two or three days. In an advanced stage of the disease, where petechiæ and other symptoms characteristic of putrescency are present, hæmorrhages frequently break forth from the mouth and nose.

When scarlatina is to terminate in health, the fiery redness abates gradually, and is succeeded by a brown color; and the skin becoming rough, peels off in small scales: the tumefaction subsides, and health is gradually restored. On the contrary, when it is to terminate fatally, the febrile symptoms run very high from the first of its attack, the skin is intensely hot and dry, the pulse is very frequent but small, great thirst prevails, the breath is very fetid, the efflorescence makes its appearance on the second day, or sooner, and about the third or fourth is probably interspersed with large livid spots; and a high degree of delirium ensuing, or hæmorrhages breaking out, the patient is cut off about the sixth or eighth day. In some cases a severe purging arises, which seldom fails to prove fatal. Some again, where the symptoms do not run so high, instead of recovering, as is usual, about the time the skin begins to regain its natural color, becomes anasarca, or fall into an atrophy, and are carried off in the course of a few weeks.

Sometimes in this form of the disease, often the lapse of several days, when the patient is apparently free from danger, petechiæ (small red spots resembling flea-bites,) will make their appearance, (from which will issue drops of blood,) upon the fingers, lips, nose, and lower extremities, and will become more and more numerous until the patient sinks. They are to be regarded as an indication of a fatal termination, although the little patient may not manifest any pain and distress, and

continue to have its attention elicited by its juvenile occupations for several days.

Scarlatina in its mild state is not unusually attended with danger; but when it partakes much of the nature of cynanche maligna, or discovers a putrid tendency, it often proves fatal. The discharge of a highly acrid matter from the nose, diarrhœa, the fauces of a dark red or purple color, without swelling, ash-colored or brown specks, soon becoming ulcerated, great prostration of strength, delirium, coma, anxious difficulty of breathing, petechiæ, and hæmorrhages, are very unfavorable symptoms.

When scarlet fever is very mild and wholly unattended by any inflammation or ulceration in the throat, little more will be requisite than to keep the apartment clean and open; to enforce a light diet without animal food; to direct cooling acidulated liquors for common drink, and to administer gentle medicines suitable to the symptoms that present themselves.

*Treatment.*—Nothing need be said regarding the treatment of the simple form of scarlatina, but the principles which are to guide the practitioner when the disease occurs in its severe forms, require considerable attention. Emetics are strongly recommended throughout the whole course of disease and particularly at the very onset.

In scarlet fever, as in measles, the vapor bath is indispensable. Notwithstanding the cold effusion which has been so long practiced by the old school is found very grateful to the patient, the vapor bath will be found equally grateful, besides we expect to perform a very considerable part of the cure by passing from the body through the skin, the morbid matter which the fever is evidently endeavoring to throw out. It may in all cases be safely applied when the skin is dry and hot. It cools the surface, abates thirst, diminishes the frequency of the pulse, headache, languor, and disposes to sleep. The bowels must be kept open, by mild laxatives and injections, the determining powers to the surface, and the room well ventilated.

In those cases of scarlatina which show a disposition to malignancy or putrescency, it will be advisable to give courses of medicine followed by stimulating tonics. No. 6, in table-spoonful doses, will be found serviceable.

Throughout the course of the disease, if there is much inflammation or ulceration of the throat it will be proper to make use of detergent gargles, as recommended under the head of cynanche tonsillaris and maligna, which in young children may be thrown in upon the fauces with a syringe, as they seldom can be prevailed on to gargle. Pepper poultices, stimulating gargles of cayenne pepper, liniments, &c., will be found highly serviceable; this treatment may be employed when the deglutition is very difficult.

Purgative medicines should be carefully avoided, for in every case they induce debility; they may in this form of disease induce diarrhœa, which is apt of itself to occur.

After the fever has subsided in the most of cases, stomach bitters and a nourishing diet, pure air, and gentle exercise, will greatly accelerate the recovery of the patient.

Scarlatina being of a very contagious nature, and never failing to excite the greatest consternation and anxiety when it breaks out in schools and families, it seems right to notice the means which have been recommended, under such circumstances, for checking its progress, and attempting its total extinction.

So long ago as 1779, Dr. Haygarth preserved 27 boys from the scarlet fever in a boarding school at Chester, by confining a patient ill of it to a violent degree, in a separate room of the same house, and by attention to perfect cleanliness. In a boarding-school at Bath, in 1805, two young ladies had a scarlet fever and a malignant ulcerated sore-throat, one of them dangerously. The governess visited the patients, and assisted to syringe their throats frequently in the day. After washing her hands, and with other strict attention to perfect cleanliness, so as carefully to avoid conveying any contagious dirt out of the sick chamber, but without changing her garments, she went among 65 of her scholars in the adjoining rooms of the house to hear their lessons and examine their work: not one of these young ladies was infected with the fever, as Dr. Haygarth was informed by the physician who attended these patients. The testimony of such numerous facts proves, beyond all controversy, that contagious miasms, in his opinion, do not adhere to clothes so as to infect others closely exposed to them. Hence typhus, scarlatina, &c., are always caught either by miasms issuing from the patient, or by miasms issuing from the contagious poison in a solid or liquid form discharged from the patient; but not by miasms adhering to clothes, &c. It completely confirms the fourth law of contagion mentioned under the head Typhus, which is of very great importance, being highly conducive to the simplicity, facility, and certainty of the rules of prevention. If, in future, a patient ill of either typhus or the scarlet fever be permitted to infect the family, where there is a room in the house for the separation of the sick, it will be justly imputed to the want of knowledge or the want of care in the attendants.

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### \* PESTIS, OR THE PLAGUE.

THE plague is a very malignant fever of a putrid and contagious nature, in the progress of which extreme debility, bubose, carbuncles, petechiæ, hæmorrhages, colliquative diarrhœa, and such other symptoms arise. The contagion of the plague is of a specific nature, giving rise to febrile symptoms, and particularly affecting the nervous and glandular system.

Sir James McGregor, in his *Medical Sketches of the Expedition from India to Egypt*, notices, that the plague is subject to considerable varieties in different seasons and circumstances. In the Indian Army, he observed, that when the disease first broke out, the cases sent from the crowded hospitals of the 61st and 58th regiments were, from the commencement, attended with typhoid or low symptoms. Those which

were sent from the Bengal volunteer battalion and from other corps, when the army was encamped near the marshy ground at El-Hammed, were all of the intermittent and remittent type. The cases which occurred in the cold rainy months of December and January, had much of the inflammatory diathesis : and in the end of the season, at Cairo, Ghiza, Boulac, and on crossing the isthmus of Suez, the disease wore the form of a mild continued fever.

The appearances of the plague have been arranged by different authors in different ways. The French writers on the subject have specified five varieties : Dr. Russel has extended them to six : but the arrangement of Sir Brooke Faulkner, drawn from extensive observation during the late appearance of that complaint in the island of Malta, which admits only of three species, appears to be the most judicious ; and this I shall therefore adopt. The propriety of distinguishing the plague into three species is also sanctioned by a small tract from the pen of Dr. Pearson.

The plague is by most writers considered as the consequence of pestilential contagion, which is propagated from one person to another by association, or by coming near infected materials.

Some, however, have doubted whether the disease is really contagious or not, whilst a few have asserted positively that it is not so : an absurd doctrine truly, which if acted upon by the Legislature, would be likely to be attended with the most injurious consequences. The fact that it is evidently contagious is fully established in Sir James McGregor's opinion ; but the laws of its transmission are not more accurately known than the specific nature of the contagion. Dead bodies, we are told, did not seem to convey it ; the heated animal body, and still more with a febrile moisture on the skin, appeared to transmit it most readily. Among the most obvious causes which contribute to induce the plague, besides contagion, may be enumerated the following, viz : corrupt or damaged grain, putrid fish or other animal substances, noxious exhalations arising from stagnant waters or slimy mud, a residence in confined situations where the current of air is obstructed, and the want of due cleanliness.

The disease attacks persons of all ages and both sexes indiscriminately ; but women, young people, and infants at the breast, have been observed in general to resist infection more than robust men. Those who were exposed to vicissitudes of heat and cold, such as bakers, cooks, and smiths, were noticed, during the campaign in Egypt, to be more particularly attacked with it.

In all epidemic plagues, terror and anxiety, filth and defective nutriment, fatigue and hurry, anger and intemperance of every description, have acted as predisposing and accelerating causes of the distemper.

In some Eastern countries the plague is wholly unknown, but more particularly in Persia and Japan. The Egyptians denominate the winter and early part of the spring their season of the plague, which they acknowledge never passes without this disease appearing in some degree. It has also been remarked that the rise, progress, and abatement of this disease in different years, bear a striking resemblance to each other. At its first appearance, which is usually in November, it assumes its most deadly form, and those affected by it sink into the grave almost



without complaint. During the winter and beginning of spring, it scarcely manifests any diminution of its virulence, but towards the end of the latter, when the weather increases in warmth as the summer approaches, its attacks become less frequent, and its malignant symptoms subside into the appearances of ordinary disease, still, however, retaining the characteristic one of glandular affection. Towards the end of June, it is said to disappear.

The plague is known to be most prevalent in Egypt soon after the inundation of the Nile, or rather its recession; for a quantity of slimy mud being deposited on the banks of the river and other places it has overflowed, occasions humid mephitic exhalations to arise, and which are supposed to produce the disease. From Sir Robert Wilson's account of the diseases of Egypt, there is great reason to suppose that a humid state of the atmosphere is favorable to the production of the plague; for the English and Turkish armies which marched to Cairo escaped contagion, notwithstanding almost every village was infected; while the troops that remained stationary on the moist shore of Aboukir were severely affected, and lost many men. A dry atmosphere appeared to him not only to be a preventive of the plague in some degree, but likewise to act as a remedy; for we are told that several men confined with this disorder in the hospital at Jaffa, escaped into the Desert, and endeavored to reach the army; but finding the attempt impracticable, they returned in three days perfectly recovered.

Baron Larrey observes that the plague puts on a more formidable appearance during the continuance of the south winds than during the winds from the north or north-east. When the latter prevailed, its effects were diminished; and if it continued for any time, the disease disappeared altogether. On the return of the south winds, (or khamshyn) it appeared again with as much violence as ever. A curious observation made by this gentleman was, that the plague rarely attacks wounded men whose wounds were in a state of plentiful suppuration; but as soon as the wounds were skinned over, a great many were seized, and few escaped death. He observed the same thing among the inhabitants of the country who had issues open. Galen, and many other celebrated writers, have also noticed, that in countries which they have seen ravaged by the plague, it had spared all those who had issues plentifully discharging.

It has been observed that the plague generally appears as early as the fourth or fifth day after infection; but it has not yet been ascertained how long a person who has labored under the disease is capable of infecting others; nor how long the contagion may lurk in an unfavorable habit without producing the disease, and may yet be communicated, and the disease excited, in habits more susceptible of the infection. It has generally been supposed, however, that a quarantine of forty days is longer than is necessary for persons, and probably for goods also. Experience has not yet determined how much of this term may be abated. If I mistake not, the Board of Trade has, however, under the sanction of the College of Physicians, somewhat abridged it.

To repeal or abrogate the quarantine laws wholly because a few misguided men have asserted that the plague is not contagious, would be

likely to bring down devastation on this nation, by exposing it to the visitation of a malady the most destructive of any to human life.

In the first species of the plague, according to the arrangement of Sir Brooke Faulkner, the energy of the brain and nervous system is greatly impaired, indicated by coma, slow, drawling, or interrupted utterance; the tongue is white, but little loaded with sordes, and usually clean, more or less, towards the centre and extremity; the anxiety is great, countenance pale, stomach extremely irritable, and the strength much impaired. Rigors and pain in the lower part of the back are among the early precursors of the other symptoms. This was observed by Sir Brooke Faulkner and the other physicians at Malta to be the most fatal species of the plague, and prevailed chiefly at the commencement of the late disaster. Those who were infected sometimes died in the course of a few hours, and with petechiæ.

In the second species, the state of the brain is the reverse of what takes place in the former, the symptoms generally denoting a high degree of excitement; the pain in the head is intense, thirst frequently considerable, though sometimes wanting, countenance flushed, and utterance hurried. The attack is ushered in by pain in the back, and rigors, as in the first species. Epistaxis not unfrequently occurs in this. Glandular swellings come out tardily, and after appearing, recede again without any remission of the general symptoms. Carbuncles arise over different parts of the body or extremities, which are rapidly disposed to become gangrenous. The delirium continues extremely high and uninterrupted, and the patient perishes in the course of two or three days. Sometimes he lingers on till the seventh, yet rarely beyond this period without some signs of amendment. Sir Brooke Faulkner found the instances of this second species very numerous, and they were nearly as fatal as the preceding. In the countenances of some of the sick, just previous to the accession of the more violent symptoms, there is an appearance of despair and horror which baffles all description, and can never well be mistaken by those who have once seen it.

The third species is somewhat akin to the last, only the symptoms are much milder, and the brain comparatively is little affected. The buboes and other tumors which make their appearance, go on more rapidly and kindly to suppuration; and by a prompt and early employment of remedies to assist the salutary operations of nature, the patient has a tolerable chance of surviving. Cases of this kind are often so mild, that persons have been known to walk about in seeming good health, and without any evident inconvenience from the buboes.

Such are the characteristic symptoms of this malignant disease, the varieties of which seem to depend in a great measure on the constitution or state of the air at the period of the epidemic prevailing, and on the habit of body of the patient at the time of the attack.

In no disease do patients bear motion worse than in this. The least motion has been known to induce syncope, and even death, particularly in the last stage of the complaint.

The plague is always to be considered as attended with imminent danger; and when it prevailed in this country about two hundred years ago, proved fatal to most of those who were attacked with it. It is prob-

able, however, that many of them died from want of care and proper nourishment, the infected being forsaken by their nearest friends; because in Turkey and other countries where attention is paid to the sick, a great many recover. Of the French army that invaded Egypt, little more, however, than one-third of all that were attacked with the plague recovered; as appears by the report made by Dr. Desgenettes, who was chief physician to that army.

The duration of the disease is various. In some instances the effect of the pestilential contagion is the immediate extinction of life; and cases have occurred wherein the patient has survived but a few hours the first sensation of illness. In other instances again, he has lived till the thirteenth, and even the seventeenth day of the disease.

Where the plague is ushered in by fever and delirium, it is seldom that the patient recovers: in spite of every endeavor, he is generally deprived of life within forty-eight hours, or on the third day at furthest. If the fever does not occur until the second day from the attack of the disease, there is less danger, as time is thereby given to obviate the consequent symptoms.

When the plague is unattended by buboes, it runs its course more rapidly, and is more generally fatal, than when accompanied by such inflammations. The earlier they appear, the milder usually is the disease. When they proceed kindly to suppuration, they usually prove critical, and ensure the patient's recovery. Sudden death has, however, been known to happen even when the violence of the constitutional disturbance appeared to have been subdued, when buboes have made their appearance, were suppurating, and the patient considered convalescent. It is generally a favorable sign when the buboe does not adhere, but shakes on its base. A gentle diaphoresis, arising spontaneously, has been known in many instances to prove critical. When carbuncles show a disposition to become gangrenous, the event will be fatal. Furuncles, petechiæ, hæmorrhages, severe vomiting, and a colliquative diarrhœa, denote the same termination.

The worst forms of the disease are always accompanied with the usual symptoms of putridity and malignity; and such rarely terminate favorably. It has been remarked, that if a patient, after an access of delirium, was suddenly restored to his senses, he seldom recovered. Most cases terminate fatally wherein the patient is comatose from the beginning. The typho-mania may be regarded as a more fatal form of delirium than the inflammatory.

Dissections of the bodies of those who have died of the plague have discovered the omentum, stomach, and intestines gangrenous in some places; the liver in a state of congestion and considerably enlarged, the gall bladder filled with black fetid bile, and the pericardium with a bloody fluid. Proofs of inflammation and gangrene have also been found in the brain and its investing membranes, in the lungs, and kidneys. In many instances the glandular system has been found in a very diseased state, and the blood black and loose in its texture, similar to what occurs in putrid fever.

*Of the Mode of Prevention.*—It is well known that the pestilential virus which emanates from the human body may adhere for a long time

to other substances, and preserve its power of producing and propagating future infection; and that in this manner it may be conveyed from the Eastern countries into any other; the persons first attacked by being exposed to the contagion then becoming the source of infection to others.

This fact being well established, it has been judged proper by the legislature of this kingdom and of some others, to oblige ships, persons, and all kinds of merchandise coming from places apt to be infected with the plague, to procure bills of health, or to undergo a certain quarantine, during which period the goods are, or ought to be, properly ventilated. An adherence to these regulations has of late years prevented the importation of the disease; but should it unfortunately ever be introduced, the following steps must be pursued for destroying the infection, and preventing its further propagation.

1st, The infected should be confined in lazarettos, surrounded by strict guards, and no kind of communication be held with them, except by such attendants as may be absolutely necessary.

2dly, The nurses or others employed in attending the sick, must take care to come in actual contact with them as seldom as possible, or place themselves in such a situation as that a stream of air may carry the effluvia towards them. They should likewise pay an unremitting attention to personal cleanliness. Dresses of oiled silk have been strongly recommended by Sir Brooke Faulkner, as an invaluable armor to such persons as are constantly obliged to be about the sick. One of these he wore himself, as did also the attendants in the military plague hospital at Malta, during the extensive prevalence of the disease, in the year 1813, in that island. Medical attendants will act prudently in changing their linen and clothes, and in well washing their whole body, but more particularly their hands, with warm water and vinegar, as soon as they quit the lazaretto.

3dly, All substances capable of being impregnated with the effluvia, or of vitiating the atmosphere, ought to be removed from the apartments of the sick to situations where the healthy cannot suffer by them, and where they may undergo a proper purification, by exposing them to a heat of about 120 of Fahrenheit, and then freely ventilating them. The linen and other clothes of the patient should be burnt. The dead should be immediately interred: probably combustion would be preferable to inhumation.

4thly, The atmosphere surrounding the infected ought to be kept as pure as possible, so that neither the patient nor his attendants may suffer from the exhalations: with which view, the strictest attention should be paid to cleanliness, a free ventilation, and fumigating with the nitric or muriatic acid, as advised under the head of Malignant Fever. A long stay in pestilential apartments that are but little aired, ought carefully to be avoided, as also the exhalations from the dead bodies, or from patients in the last stage of the disease.

5thly, To avoid whatever weakens the body, by giving way to intemperance or sensuality, or by making use of a poor diet, great fatigue, or considerable evacuation.



6thly, To keep the mind cheerful, and as free from care, anxiety, fear, and lowness of spirits, as possible.

7thly, By strengthening the body, we enable men to resist contagion the better; therefore a course of medicine may be administered, and the person should use stomach bitters, stimulating tonics, &c., daily, when he is liable to become infected.

In Dr. Duncan's *Annals of Medicine* for 1797, is inserted an article relating to the cure and prevention of the plague by frictions of the whole surface of the body with olive-oil, and communicated, as we are given to understand, by George Baldwin, Esq., at that period His Britannic Majesty's Agent and Consul-General in Egypt.

It is mentioned, that there is no instance of a person rubbing a patient having taken the infection; but, by way of precaution, it is advised to anoint himself all over with oil, and to avoid receiving the breath of the infected person into his mouth and nostrils. The prevention to be used in all circumstances, is that of carefully anointing the body, and living upon light and easily digestible food.

A striking observation made by Mr. Baldwin is, that among upwards of a million of inhabitants carried off by the plague in Upper and Lower Egypt, during the space of four years, he could not learn that a single oilman, or dealer in oil, had suffered.

Mr. Jackson, in his *Reflections on the Commerce of the Mediterranean*, likewise informs us, that in the kingdom of Tunis, where the plague frequently rages in the most frightful manner, destroying some thousands of the inhabitants, there never was known an instance of any of the coolies, or porters, who work in the oil-stores, being in the least affected by this disorder, their bodies being always well smeared with the oil, as well as their clothes being imbued with it.

It has been considered as pretty certain that in the generality of instances the contagion of the plague enters the body through the medium of the cutaneous lymphatics, and thence produces the disorder of the lymphatic glands. This idea is illustrated by the probability that the external use of oily frictions lessens the susceptibility to infection; and Sir James McGregor mentions a fact which much favors the opinion, by observing, that the men who were employed in applying oily friction to the camels for some epidemic affecting them, escaped the plague.

The evidence produced in behalf of the plan communicated by Mr. Baldwin, seems more satisfactorily as to the preventive powers of the application, than as to its sanative properties after the disease has once taken place. It seems, however, right to notice, that Dr. Assalina, who was a medical officer in the French army which invaded Egypt, makes favorable mention of oily frictions in his *Observations on the Plague*, as being generally followed by copious sweating; and to this he thinks their beneficial operation is to be attributed. We are also told by Mr. Jackson, that he recommended the remedy to several Jews and Mussulmans during the time that the plague was depopulating West Barbary, in 1799 and 1800; and no instance of its failure, when duly persevered in, even after infection, had manifested itself, had come to his knowledge.

Inoculation for the plague has been tried by some physicians, in order

to discover if this malady could not be checked or rendered less virulent thereby ; and it appears from Sir Robert Wilson's History of the Expedition to Egypt, that Dr. Whyte, resolving to become the patient of his own speculation, during the time this disease raged at Rosetta, inoculated himself with matter taken from the buboes of an infected person. The attempt failed twice ; the third proved fatal in three days after the symptoms showed themselves.

It likewise appears that Dr. Desgenettes, in order to lessen the general alarm, and to inspire confidence among the French troops, inoculated himself both in the groin and arm-pit, with a lancet dipped in the pus of a buboe in a convalescent patient. The inoculation, however, failed ; and the only consequence was a slight inflammation on the inoculated parts, which continued for more than three weeks.

As the future susceptibility to the disease is by no means, however, destroyed—for the same person may be afflicted with it repeatedly, and even may be attacked twice in the same season with it, as Dr. Desgenettes experienced, (many of the convalescents from the plague, who were appointed to take care of the sick, having been, he observes, seized a second time,) this experiment would not be advisable, unless it could be ascertained that the disorder is rendered milder by the inoculation. This is a point not yet, however, established : indeed, the information afforded us by Mons. Sonnini seems to lead to a contrary conclusion ; for he mentions, that a Russian surgeon, who was a prisoner at Constantinople, with a number of his countrymen, took it into his head to inoculate these unfortunate men with the plague, under the supposition of rendering the contagion less destructive ; but by doing so he killed two hundred of these prisoners : and fortunately for the rest, the inoculator, after having performed the operation on himself, soon died of his own treatment.

*Treatment.*—Respecting the plague, we should set out with the bold determination of quelling this formidable enemy in its very onset, and before it shall have made a fatal breach in the constitution. An emetic given at the commencement, has often proved of the utmost importance. It should be repeated by all means if the nausea and bitter taste in the mouth be not removed. After cleansing the stomach with lobelia, and the bowels by enemas, and thereby exciting a determination towards the skin, the cutaneous action is to be maintained by diaphoretics, and the vapor bath. Dr. Sydenham, says, that he prefers the dissipation of the pestilential ferment by sweating, rather than by any other method, and gives this as his reason : "Sweating does not in the same degree prostrate the strength of the patient." "The practice of bleeding a patient in plague, alone," says an eminent physician, "never fails to lead to a fatal issue." For stimulants, there is the utmost necessity ; the debility is, from the first, extreme, and strengthening the vascular action must be supported by all means. The learned Dr. Good has declared, that "Diaphoresis is, indeed, the evacuation that relieves most certainly and most effectually ;" and, he continues, "it should be maintained by warm diluent and supporting drinks."

Great attention is to be paid to the local treatment of the buboes. They never go back it appears, and it is usual, therefore, to employ

means with the view of accelerating their suppuration. For this purpose, poultices, &c., may be used. It is quite obvious that little can be done in the way of surgical treatment in plague, as by internal medicines, and local applications, we perform the cure.

It will be necessary after the stomach and bowels are cleansed, that tonics be combined with the stimulants, to keep up the strength of the patient.

Treatment in plague cannot essentially differ from that laid down in Asiatic Cholera.

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### MILIARIS, OR MILIARY FEVER.

This fever takes its name from the small pustules or bladders which appear on the skin, resembling in shape and size the seeds of millet, being in general numerous on the breast, back, and other parts where there is most moisture on the skin. It may be distinguished from the other exanthemata by its pathognomic symptoms, the peculiar sour and rank odor of the sweat, attended with dejection of spirits, oppression, and sense of constriction about the precordia, anxiety, and frequent sighing.

Many of our modern physicians seem to think that the disease is never a primary one, but arises in consequence of some other; particularly where much sweating has been excited, either by keeping the patient too warm, or by giving heating medicines.

All debilitating powers, such as a lax habit of body, weakness, however induced, excessive evacuations, the presence of irritating matter in the primæ viæ, the period of child-birth, long continued menstruation, &c., may be regarded, most probably as predisposing causes, while the hot regimen is to be looked upon as the principal exciting cause of the eruption. This conclusion seems justifiable, as it is found, that whatever the state of the patient may be, miliary eruption is very generally avoided by exposure to cool air, and administering cold liquors.

It has been observed to affect both sexes, and persons of all ages and constitutions, but that females of a delicate habit are most liable to it, particularly in child-bed. It is, however, by no means a contagious disease, and has rarely, if ever, been known to prevail epidemically.

Moist variable weather predisposes most to this eruption, and its occurrences are more usual in the spring and autumn than in the other seasons. Winter is the least favorable to its appearance.

Miliary fever makes its attack with a slight shivering, succeeded by heat, restlessness, loss of strength, depression of spirits, anxiety, sighing, difficulty of breathing, oppression at the chest, and a low quick pulse. The tongue appears white, the mouth is dry, the body costive, and when the disease is violent, coma or delirium is apt to arise. Great dejection of spirits and anxiety, with fetid sweats, are, however, the most common forerunners of the miliary eruption.

The patient after a short time feels an itching or pricking pain under the skin, soon after which innumerable small pustules, of a red color, and of the size of millet seeds, come out first upon the neck and breast, thence gradually extending to the trunk and extremities; their prominence is imperceptible to the sight, yet evident to the touch; they often lose their redness, and appear of the ordinary color of the skin. They are usually distinct, but now and then we may perceive them clustered together.

About the second day after the appearance of the eruptions a small vesicle may be observed on the top of each pimple, and in two or three days more, they break, and are succeeded by small crusts, which fall off in scales. Sometimes it happens, that when one crop of eruptions has disappeared, another will succeed it.

On the eruption being visible, most of the foregoing symptoms are usually relieved. The sweating is apt, however, to continue, unless proper means are used to check it, and to be attended for many days with a fresh crop of eruptions.

The eruption being steady, and not disappearing after having come out; the fever inclining more to the nature of synocha than typhus; and there being a considerable remission of the symptoms upon the appearance of the eruption, denote a favorable issue; whereas great anxiety, dejection of mind, vast prostration of strength, difficulty of breathing, flaccidity of the parts covered by the eruption, its sudden disappearance, a rapid, weak, and intermitting pulse, violent vomiting, profound coma, delirium, convulsions, petechiæ and other symptoms of putrescency, are to be considered as prognosticating a fatal termination to the disease.

The appearances to be observed on dissection will depend on the nature of the fever which accompanies the eruption, and which most usually is of the typhoid kind.

As the disease is evidently brought on by the application of too much heat, an early attention ought to be paid to the means of preventing it from appearing in those affections which it is apt to accompany. With this intent, the patient should not be covered with too many bed-clothes; neither should the chamber be kept hot by means of too much fire, or by being closely shut up; on the contrary, a sufficient ventilation ought to be allowed, so as to keep it of a proper temperature. In doing this, we are, however, to take care not to run into the opposite extreme, and to allow too free an admission of cold air.

*Treatment.*—As this is a form of disease of great debility, care should be particularly directed to this point in the treatment. After cleansing the system in the usual manner, let the treatment be then strictly tonic and antiseptic; purgatives must not be tolerated. To keep the bowels open, a laxative tonic may be used. The object will not be to check the perspiration by any means, but to change it from an unhealthy to a healthy; hence, from an early stage of the disease throughout the whole course, the vapor bath must be applied daily, and a constant use of diaphoretics.

To prevent this form of disease from arising in pregnant women, costiveness ought to be carefully avoided, and when in child-bed, they



should strictly observe a proper regimen, and keep their chamber in a proper temperature, being at the same time covered with clothes, and only changing them with the weather.

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### PEMPHIGUS, OR VESICULAR ERUPTION.

THIS disease consists in eruptions dispersed over different parts of the body, internal as well as external, which gradually rise up into vesicles of about the size of a large nut, containing a yellow, serous fluid, that is in some instances of an ichorous nature, and which again disappear in the course of three or four days. By some authors it is described as being attended both by fever and contagion; and by others as being accompanied by neither. It is therefore supposed that there are two species of it, the chronic and acute. The disease is, however, of very rare occurrence. Dr. Willan describes three varieties of it, viz: pemphigus vulgaris, pemphigus contagiosus, and pemphigus infantilis; but he has never seen any instance of the first two. The last, he says, occurs sometimes in weak, emaciated children, who are destroyed by the pain and irritation of the successive vesications and ulcerations.

By the generality of the physicians who have favored us with their opinions, the principal of whom is Dr. Dickson, it has not been considered as contagious. This gentleman saw six cases of the complaint, in none of which it was received by contagion, nor communicated to those who attended the sick. Dr. Cullen informs us that the blisters are filled with a thin ichor, which is discharged, not absorbed, as mentioned by Dr. Dickson; but during his whole practice it appears that he met only with a single case of pemphigus.

Some slight degree of lassitude, sickness, and headache having prevailed for a day or two, small vesicles of about the size of a pea make their appearance over different parts of the alimentary canal; and these gradually increase till they become as large as a nut or almond. Now and then they are to be met with of the size of a walnut. They are surrounded by an inflamed margin, or areola and distended with a faintly yellow serum. They often are accompanied with difficulty of deglutition, nausea, vomiting, a sense of soreness in the abdomen, and intense heat of the skin. Sometimes they are so numerous as to run into each other. The pulse during this time is small and frequent, and the patient is sensible of a considerable degree of debility.

An intense burning heat of the skin appears to be a prominent feature of the disease; and in no other exanthematous fever is there usually felt so strong a sensation of heat; the vesicular eruption appearing to be the consequence of extreme action of the capillary vessels, thereby generating an increased evolution of heat, and augmenting the virulence of the discharge. The sensation it conveys to the patient is somewhat similar to a common scald, with a train of concomitant febrile symptoms.

After the vesicles have remained for some days, they either break and discharge their contents, or they begin to shrink, and so disappear.

This seems to be the most favorable termination, as they have been known to leave troublesome ulcers behind them when they broke.

Pemphigus resembles the small-pox, in frequently leaving pits in the skin, and in the parts which the vesicles occupied remaining of a dark color for a considerable time afterwards. In the third volume of *Medical Facts and Observations* Dr. Winterbottom takes particular notice of this occurrence.

We are to be influenced in our prognosis by the seat and appearance of the vesicles. When they appear only on external parts, and are not numerous, they demand little attention: when they are numerous, when they attack the alimentary canal, and are attended with a small hard pulse, and great prostration of strength, the danger is considerable. The danger is likewise very great when the ulcers left by the vesicles show a tendency to gangrene, by becoming livid; which seldom happens, however, unless a fever of the true typhoid kind has accompanied the eruption.

On taking a comprehensive survey of what has been recorded by eminent writers on the subject, and in addition to those already referred to, we must conclude that pemphigus is an affection merely sporadic, and not of a contagious nature; that it is connected with a state of debility; and that the symptoms accompanying one or other instances of this affection are those which attend febrile diseases, whether inflammatory or putrid.

*Treatment.*—Pemphigus is certainly to be considered a disease of very rare occurrence, much more so than either of the other forms of cutaneous disease. It seems to depend upon a depraved and debilitated state of the whole system, and consequently the indications of cure are obvious. Having cleansed the stomach by a lobelia emetic, and dislodged the contents of the intestines by some mild laxative and the syringe, we may then give tonics and stimulants to strengthen and tone the system, not forgetting a generous diet. On the first accession of the disorder, if the skin is hot and dry, it will certainly be of service to give diaphoretics and the bath, in order to excite an action upon the surface.

Where vesicles arise in the mouth and break so as to become ulcers, we should then employ cayenne gargles, and if there is reason to suppose that eruptions have become extended to the alimentary canal, it will be necessary to order large draughts of mucilaginous drinks.

The patient's strength must be kept up and recruited by the liberal use of tonics and stimulants.

## URTICARIA, OR NETTLE-RASH.

This disease takes its name from its being attended by an eruption in the skin, similar to what is produced by the stinging of nettles, and terminates in a desquamation of the cuticle. Dr. Willan, in his *Treatise on Cutaneous Diseases*, notices six varieties of it.

In some instances, a slight degree of fever either precedes or attends the eruption: this is not confined to any particular parts of the body, but is somewhat dispersed, being always accompanied with a considerable degree of heat and itching. In some persons it lasts only a few days, in others many months, appearing and disappearing at intervals. It usually recedes in the day-time, and in the evening breaks forth again, accompanied sometimes with slight febrile symptoms. In some cases urticaria is characterized by large wheals or bumps, which, on pressure, appear of a solid nature, without any cavity or head; nor do they contain any kind of fluid.

The causes of urticaria are by no means obvious, but it has been supposed to arise from suppressed perspiration, or some irritating matter in the stomach. A disease very similar to febrile urticaria is produced in particular constitutions by substances received into the stomach which prove offensive, such as almonds, mushrooms, crab-fish, muscles, lobsters, herrings, &c. When a person is poisoned by fish of a deleterious nature, it frequently shows itself as a consequence thereof. The effect is rapid, and the symptoms are violent for some hours. In consequence of such circumstances physicians have been induced to conclude that urticaria, attended with fever, originates generally from indigestion, or from some substance of a noxious quality taken into the stomach.

*Treatment.*—The nettle-rash being a disease, wholly devoid of all danger, may often be left to follow its own course, but when it has arisen from any thing noxious being taken into the stomach an emetic should be administered instantly. If it proves obstinate, a course of medicine will in no case fail to throw off the disease. The body should be kept open by some mild laxative, such as the laxative tonic. (See 2d vol. *recipies*.)

## GENERAL DOCTRINE OF HEMORRHAGY.

THE diseases comprised in the order of hæmorrhages are, in every point of view, much less interesting than the inflammations. They are of less frequent occurrence, and seldom met with in an idiopathic form. Indeed, it is only by a stretch of nosological refinement that they can be considered in the light of a distinct order of diseases. The rupture of a blood-vessel is not necessarily connected with a train of other symptoms, and is therefore itself rather an accident or a *symptom*, than a state of disease. While engaged in the investigation of the phlegmasiæ, we were content to refer the phenomenon to the presence of *inflammation*. In the class of hæmorrhages, we must always look to something beyond,

and endeavor to determine upon what ulterior cause the rupture of the vessel depends.

The general doctrine of hæmorrhagy has, nevertheless, always excited attention in the schools of physie; and much learning has unquestionably been shown in investigating the principles which it involves. Dr. Cullen's dissertation on this subject must be considered as a remarkable specimen of acute pathological research; but these discussions, not having the same influence on practice with some of those which have been already before us, do not require the same attention from the student, and will therefore be only briefly alluded to in this place. Without venturing upon those abstruse theoretical speculations concerning hæmorrhagy, in which some authors have indulged, it may, however, not be altogether uninteresting to notice the principal points which have been thought of importance; and this more particularly, as it will afford an opportunity of exhibiting in a connected view, several diseases included in this order, the particular consideration of which will be taken up in future parts of the work. Although there may not prove to be many points of analogy among them, it will not be the less useful to notice the principal circumstances in which they differ, and above all, the various, and even opposite states of the system in which they occur.

Hæmorrhages may be divided, in the first place according as they are general or local. A general disposition to hæmorrhagy is not common; but it occurs in scurvy, and in a disease of a very singular kind, known by the name of the *hæmorrhæa petechialis*. The pathology of this affection is but little understood. Different speculations have been thrown out concerning it, which will hereafter come under our notice, when considering the class of chronic constitutional diseases; but for the present, it may be sufficient to state, that it appears to be wholly different from scurvy, that it has some obscure connection with disease within the thorax, and that it is occasionally to be treated by antiphlogistic measures. A general disposition to hæmorrhagy occurs also in many acute diseases, more particularly in different forms of inflammatory and typhoid fever.

Local hæmorrhages may be arranged according as they happen in one or other of the three great cavities or divisions of the body. Hæmorrhagy from the vessels of the head occurs either as *epistaxis*, or as *apoplexy*; diseases which have, in some cases, an important pathological connection. Hæmorrhagy from the thorax is denominated *hæmoptysis*. Hæmorrhagy from the abdominal cavity assumes the several forms of *hæmatemesis*, *melæna*, *hæmorrhoids*, *hæmaturia*, and *menorrhagia*. Two or more of these forms of local hæmorrhagy are occasionally present at the same time, or occur *vicariously* to each other, illustrating strongly the importance of the general doctrine of hæmorrhagy. They show that hæmorrhages, even the most partial, or apparently accidental (such as that which sometimes follows the extraction of a tooth,) are yet connected with a morbid condition of the *whole* arterial system, which is unable to preserve its surface unbroken.

From the situation assigned to hæmorrhagic diseases in most systems of nosology, symptoms of *fever* might be expected; but one of the most important considerations in the general doctrine of hæmorrhagy, is the



frequency of its occurrence without any evidence of fibrille excitement existing in the system. In some cases, hæmorrhage is preceded by rigors; and during the flow of blood the pulse is frequent, full or even hard, the skin is hot, and there is thirst and restlessness. At other times, hæmorrhage exists with a stage of general constitutional debility, and arises from causes that obviously weaken the tone of the system; as is well exemplified in some of the cases of menorrhagia. The effects have long been known; and they have given rise to one of the oldest pathological distinctions among hæmorrhages, *viz.* into the *active* and the *passive*.

All hæmorrhages when long continued are apt to induce a very alarming state of constitutional weakness. The blood degenerates into a state of morbid tenuity. It is rather bloody serum than blood. Even in the heart itself but little crassamentum will be found. This condition of the fluids is generally known by the name of *anæmia*, and it perhaps sometimes exists independent of hæmorrhage. Its symptoms are a pale and bloodless countenance, great weakness, disposition to syncope, loss of appetite, indigestion, swelled legs, and a pulse, weak, tremulous, and intermitting. It is most commonly witnessed in women suffering under cancer uteri, and its attendant hæmorrhage.

In estimating the circumstances which may lead to the accidental rupture of a vessel in an internal part, there are three which chiefly merit attention. The first of these is the quantity of blood in the body; the second is the force of the heart's action (these two constituting the impetus, or *momentum* of the blood;) and the third is the strength of the coats of the containing vessel, depending principally on the *original* constitution or structure of the body. By one or other of these considerations, we may explain the manner in which different circumstances act as the predisposing or occasional causes of hæmorrhage, and the *modus operandi* of the remedies which are resorted to for its relief or removal.

The mere force of the heart's action has something to do with the occurrence of hæmorrhage; for heat, and violent exercise of the whole body, as in running, are among the most frequent of its exciting causes; and they can only act by hurrying the circulation. The idea entertained by old pathologists of a *spurious* plethora has been long abandoned. But the more necessary circumstance to be kept in view, is the connection of hæmorrhage with the state of partially increased action of vessels, or irregular determination of blood; or, as it is now more commonly called, *local congestion*. This has always been recognized as a principle in pathology of the highest importance; and it is undoubtedly the most generally applicable of any which have been established in the whole extent of pathological science. We have seen it influencing the phenomena and treatment of every form of idiopathic fever. It is the very basis of all reasoning on the subject of inflammatory action; and we shall subsequently find it to extend to many of the most important chronic diseases of the body. In what manner this local determination of blood is brought about—how it is that the heart, which appears calculated to supply blood equally to all parts of the body, should distribute it unequally, are questions which the inquiries of physi-

ologists have not, hitherto, enabled us to decide. The fact itself, however, is well ascertained; and it strongly illustrates the great principle, which, though generally professed, has yet been too frequently lost sight of—that the doctrines of hydraulics are but distantly applicable to those of the circulation of the blood.

With this doctrine of local congestion, that of hæmorrhagy is closely connected, as will hereafter be illustrated in several ways; by the phenomena, for instance, of epistaxis and apoplexy; by the effect of posture in favoring different forms of hæmorrhagy; and by the fact, that exercise of the lungs in singing, or loud or long speaking, will occasion a fit of hæmoptysis. We have already seen, that the state of hæmorrhagy is sometimes dependent on that of *inflammation*, as in the instance of dysentery and pneumonia; and there is reason to believe, that, in some other cases, the same pathological connection may subsist, although it be less apparent.

By some pathologists it has been conjectured, that the evolution of organs at different periods of life is one cause of those partial congestions of blood which take place in the body, and which, by over-distending a particular set of vessels, dispose them to rupture. It has generally been observed, that epistaxis is the hæmorrhagy of childhood; hæmoptysis, of the age of puberty; and that the abdominal hæmorrhages occur in the more advanced periods of life. It is possible, that *many* circumstances contribute to this peculiarity in the phenomena of the hæmorrhages; but the theory which ascribes it to partial plethora from the evolution of organs has probably some foundation in nature.

The third general condition of the body which was noticed as tending to hæmorrhagy, is a weakened state of the coats of the blood-vessels. This usually depends on original formation, and is not unfrequently hereditary. In some constitutions the arterial system appears to be peculiarly weak and lax; and it has been conjectured, that this often occurs of a scrofulous diathesis. In these habits it is reasonable to suppose, that the blood-vessels will give way from the application of causes which would have no such effect in a different habit of body. An idea is entertained by some pathologists, that mere *laxity* of the coats of vessels, independent of actual *rupture*, is sufficient to cause the effusion of blood. That the coloring particles of the blood may *exude* along with the secretions of the part in certain relaxed conditions of a membrane is probable; but it is questionable how far this corresponds with genuine hæmorrhagy.

Hæmorrhagy may take place both from veins and from arteries; and frequent attempts have been made to explain what circumstances determine the one or the other of these events. It is generally admitted that arterial hæmorrhage is most frequent in early life, and venous hæmorrhage at an advanced age. This circumstance is believed to depend upon certain differences in the *relative density* of the coats of arteries and veins at different periods of life. The portion of the *venous* system most liable to hæmorrhagy is the vena portæ. This vessel appears to differ in structure, as it certainly does in distribution, and probably in function, from the other veins of the body, and to partake closely of the nature of an artery. We presume, that in hæmatemesis, and in certain

cases of abdominal hæmorrhage, the rupture takes place in some of the branches of the *vena portæ*. Whenever there is a disposition to hæmorrhagy, either venous or arterial, it is reasonable to expect that the vessels will give way in that part where they are least supported by integuments, or surrounding muscular or ligamentous substance. Hence we may perceive, why hæmorrhages are so much more frequent from the lungs, and the vessels of the Schneiderian membrane, (membrane of the nose,) than from any other part of the body.

The general principles of treatment in hæmorrhagy must be varied to meet the varying circumstances under which it occurs. A very erroneous idea once prevailed in the schools, that hæmorrhages were salutary efforts of nature, and that they were to be encouraged rather than checked. This originated, in part from the temporary relief which the patient experiences from the discharge of blood; but the reasoning by which the doctrine is supported is vague, and the practice to which it leads, at least in the great majority of cases, dangerous. We may not always have it in our power to check hæmorrhagy, but we should at least attempt it.

## HEMORRHAGE, OR INVOLUNTARY DISCHARGES OF BLOOD.

UNDER this title are comprehended active hæmorrhages only; that is, those attended with some degree of symptomatic fever, and which depends upon an increased impetus of the blood in the vessels from which it flows, chiefly arising from an internal cause.

The principles of treatment in hæmorrhagiæ are four; first, to remove the cause by which it may have been excited; second, to equalize the circulation and prevent the determination of the blood to the particular vessels; third, to induce the formation of coagulum about the mouths of the ruptured vessels; fourth, to contract the muscular fibres of the parts implicated. These means remain to be pointed out under each distinct hæmorrhage, in the subsequent pages.

## EPISTAXIS, OR HÆMORRHAGE FROM THE NOSE.

IN the nose there is a considerable net-work of blood-vessels expanded on the internal surface of the nostrils, and covered only with a thin tegument: hence, upon any determination of a greater quantity of blood than ordinary to the vessels of the head, those of the nose are easily ruptured. In general the blood flows only from one nostril; but

in some cases it is discharged from both, then showing a more considerable disease.

Persons of a sanguine and plethoric habit, and not yet advanced to manhood, are very liable to be attacked with this complaint: females being much less subject to it than males, particularly after menstruation has commenced. Peculiar weakness in the vessels of the part, and the decline of life, may also be considered as predisposing causes. Great heat, violent exertion, external violence, particular postures of the body, and every thing that determines the blood to the head, are to be looked upon as its exciting causes.

Epistaxis comes on at times without any previous warnings; but at others, it is preceded by a pain and heaviness in the head, vertigo, flushing in the face, heat and itching in the nostrils, a throbbing of the temporal arteries, and a quickness of the pulse. In some instances, a coldness of the feet, and shivering of the whole body, together with a costive belly, are observed to precede an attack of this hæmorrhage.

The complaint is to be considered as of little consequence when occurring in young persons, being seldom attended with danger; but when it arises in those who are more advanced in life, flows profusely, and returns frequently, it indicates too great a fulness of the vessels in the head, and not unfrequently precedes apoplexy, palsy, &c., and therefore in such cases is to be regarded as a dangerous disease.

When this hæmorrhage arises in any putrid disorder, it is to be considered as a fatal symptom.

*Treatment.*—By wetting the head with cold water, and bathing the feet in warm, at the same time, will often stop the bleeding. A snuff made of the leaves of witch-hazle inhaled into the nostrils, will also stop it.

In obstinate cases, immerse the lower extremities in luke-warm water, and let the patient use freely a tea made of witch-hazle, with the addition of cayenne, to which may be added a little beth root. Opening the bowels at the same time by stimulating injections, will in no case fail to make a derivation of blood from the vessels of the head. Steaming the lower extremities, will also have a tendency to draw the blood from the head and facilitate the operation of other remedies.

As a styptic, the powdered charcoal is highly recommended. It may be used by snuffing, or it may be applied by means of tents, moistened with water and rolled in the powdered charcoal, and introduced into the nostril. Any of our vegetable astringents may be used in the same manner advantageously.

It may be possible that in some very severe case brought on by general debility, in addition to what has been already prescribed, a course of medicine will be requisite, followed by tonics. Persons who are subject to this complaint should be exceedingly careful that the extremities are kept warm, and the surface moist, and avoid all those circumstances which might either determine the blood to the head, or prevent its free return from it.

It sometimes happens that when the blood stops outwardly, it nevertheless, continues inwardly, and prevails to such an extent as to threaten suffocation, particularly when the patient falls asleep. In such cases a



piece of sponge should be fastened to a string or thread, and be passed up the nostrils by means of a pliable probe, afterwards drawing it back, so that it will prevent the hæmorrhage by pressure; this should be kept in the nostrils for some length of time. The clotted blood should not be removed until the mouths of the blood vessels are healed.

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## HEMOPTYSIS, OR SPITTING OF BLOOD.

The discharge of blood from the lungs is usually accompanied by symptoms denoting determination to that organ amounting in some cases, perhaps, to actual inflammation. There is a sense of fulness, heat, weight, tightness, or oppression about the chest, increased on full inspiration, some uneasiness in breathing, and a short tickling cough. Symptoms of fever are also present, such as shiverings, pains in the back and loins, a flushed countenance, lassitude, costiveness, a dry skin, and a hard pulse; but these are subject to great variety. I have seen the pulse, for instance, feeble and indistinct, so as to be hardly perceptible. The spitting up of blood is commonly preceded by a degree of irritation felt about the larynx, and a saltish taste perceived in the mouth. The quantity of blood brought up is very various. A slight tinge of the expectoration is sufficient to characterize the disease, as it marks the hæmorrhagic tendency, and may quickly be followed by a gush of blood. Again, it is sometimes so profuse as to occasion alarm for the immediate safety of the patient. It commonly recurs for several days together, and is often renewed upon very slight exertions. The blood is of a florid color and frothy.

To distinguish this disease from hæmatemesis, or vomiting of blood is often more difficult than might be anticipated, owing to the occurrence of vomiting during the discharge of blood from the lungs; but in ordinary cases, an attention to the preceding symptoms, to the appearance of the blood, and to the general habit of the body, will be sufficient to establish the diagnosis.

The most important considerations connected with hæmoptysis are those which relate to its predisposing and exciting causes; for by these we are to form our judgment of the probable termination of the disease, and be in a great measure guided in our method of treatment. The simple rupture of a blood-vessel in the lungs, from fulness of blood and increased action, either within the chest, or throughout the body, independent of any peculiarity of structure, has sometimes been observed, but it is unquestionably a rare occurrence; and this must surely be a matter of surprise, when we reflect how numerous and how large the blood-vessels of the lungs are, and by what a very delicate membrane they are covered and supported. Under such circumstances, however, hæmorrhagy may occur from the lungs, as from the vessels of the Schneiderian membrane. By rest and low diet, the ruptured vessel would soon heal, without any further bad consequence.

The second predisposing cause of hæmoptysis, is the *scrofulous diathesis*, or that habit which is marked, among other peculiarities, by a general delicacy of structure throughout the body—light and thin hair, a smooth and soft skin, a lax muscular fibre and slender form. Of this delicacy of structure the blood-vessels appear to partake; and consequently a disposition to *hæmorrhagy* becomes also a character of scrofula. That it should particularly appear in the lungs, might be conjectured from what has just been stated; but a further disposition in such a habit of body to this form of hæmorrhagy is given by *tubercle*. It is necessary, however, to add, that weakness of the vessels of the lungs, disposing them to rupture, is often met with independent of scrofula. Hence it happens that some persons spit blood from any cause that weakens the body generally.

The third circumstance giving a predisposition to hæmoptysis is *period of life*. It rarely happens to children under the age of twelve years, and is not frequent after that of five-and-thirty. It chiefly prevails between the ages of fifteen and twenty-five. Pathologists have attempted in several ways to explain this circumstance. It has been said to depend upon the growth of the thorax continuing, after other parts of the body have been fully evolved, manifested by the increased width which the chest acquires at that period of life. Dr. Cullen has imputed it, in part at least, to a want of due balance between the aortic and pulmonary systems, which must chiefly be felt at that age, when the former has arrived at its utmost extension and resistance. To whatever cause it is to be ascribed, there can be no question as to the general correctness of the position, that this particular period of life gives a remarkable predisposition to hæmorrhagy from the lungs.

The fourth predisposing cause of hæmoptysis is *mal-formation of the chest*, which obviously acts by preventing the due expansion of the lungs. Persons who have suffered in early life from rickets, or tight lacing, to such an extent as to affect the spine or ribs, are very liable at another age to hæmoptysis. The scrofulous habit of body is characterized by prominent shoulders, and a narrow chest; and this is one among other reasons, why the scrofulous diathesis is so frequently accompanied by a tendency to hæmoptysis, upon all occasions which impel the blood with any degree of increased impetus upon the vessels of the lungs,—in other words, upon the application of the *exciting* causes. These are very numerous, some acting more immediately upon the lungs, and some indirectly through the medium of the general system.

Among the exciting causes of hæmoptysis, which act directly upon the weak blood-vessels, the most important are external injuries; violent exercise of the whole body, as in running, or wrestling; or of the lungs in particular, as in loud or long speaking, playing on wind instruments, or glass blowing. Those which act indirectly are full living, and particularly the free use of wine; alternations of atmospheric temperature, and, as some allege, of atmospheric pressure; sudden exposure to cold after being over-heated; the suppression of usual evacuations; and apparently in some cases the amputation of a limb.

In a large proportion of cases, however, hæmorrhagy from the lungs is but a symptomatic affection; and the prognosis, therefore, merges in

that of *consumption*. The connexion that subsists between these two diseases, hæmoptysis and tubercular phthisis, is in a practical point of view of the highest importance. The subject will be more formally noticed when treating of consumption.

*Treatment.*—The most prompt measures should be as speedily applied as possible, to check the effusion of blood. When the spitting of blood takes place in warm and relaxing weather, the pulse weak, and the ordinary evidences of febrile excitement wanting, we may reasonably presume that the rupture of the blood-vessel has been owing to relaxation and debility. Under such circumstances, the best astringent tonics should be advised. The patient may be directed to take any of the vegetable astringents, combined with golden seal, poplar, and nerve powder, either in decoction or substance, or these combinations may be given in a little port-wine two or three times daily.

After the effusion is stopped, we are to use every possible means to prevent its return. The best tonics should be continued; quietude and gentle diet recommended. Large portions of common salt will sometimes check hæmorrhage from the lungs, particularly, when the bleeding is very profuse. Equal parts of composition and capsicum, are also considered a very excellent remedy in checking this variety of hæmorrhage.

The nature of the occasional cause should be particularly kept in view in regulating the treatment of hæmorrhage, and especially for the prevention of its recurrence.

When this malady is occasioned by some violent wrench or strain, without the existence of a constitutional predisposition, recourse should be had immediately to thorough courses of medicine, as the most prompt and effectual means of establishing a perfect cure.

Spitting or vomiting blood not unfrequently occurs in females from a suppression of the monthly discharge—and when this is the case, it shows itself more particularly at the periodical times she should be unwell. The complaint is then attended with cough and other pulmonary indications. In cases of this kind the approximate remedies should be resorted to for the relief of the primary disease.

## HEMATEMESIS, OR VOMITING OF BLOOD.

A HÆMORRHAGE of blood from the stomach is readily to be distinguished from one which proceeds from the lungs, by its being usually preceded by a sense of weight, pain, or anxiety in the region of the stomach; by its being unaccompanied by any cough; by its being discharged in a very considerable quantity; by its being of a dark color, and somewhat grumous; and by its being mixed with the other contents of the stomach.

The disease may be occasioned by any thing received into the stomach which stimulates it violently or wounds it; or may proceed from blows,

bruises, or any other cause capable of exciting inflammation in this organ, or of determining too great a flow of blood to it : but it arises more usually as a symptom of some other disease, (such as a suppression of the menstrual or hæmorrhoidal flux, or obstructions in the liver, spleen, and other viscera,) than as a primary affection.

Towards the close of scarlatina maligna, the malignant forms of typhus, and other disorders of a like nature, where symptoms of putrescency prevail in a high degree, a hæmorrhage from the stomach is very apt to arise.

Hæmatemesis is seldom so profuse as to destroy the patient suddenly ; and the principal danger seems to arise, either from the great debility which repeated attacks of the complaint induce, or from the lodgment of blood in the intestines, which, by becoming putrid, might occasion some other disagreeable disorder.

*Treatment.*—Where this complaint has arisen from a plethoric peculiarity of the system, and is attended with febrile symptoms, full courses of medicine should be immediately applied.

The frequent use of the vapor bath, astringents, and mucilages, are also to be advised. In the existence of the disease as a secondary affection of some putrid malady, the best anticeptics, such as No. 6, chloride of soda, a strong decoction of bayberry, must be given ; at the same time we should sustain the strength of the cutaneous exhalents, by the local application of third preparation with frictions, that the blood may be invited back upon the surface.

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## HÆMATURIA, OR VOIDING OF BLOOD BY URINE.

THIS disease is sometimes occasioned either by falls, blows, bruises, or some violent exertion, such as hard riding and jumping ; but it often arises from a small stone lodged either in the kidney or ureter, which by its size or irregularity wounds the inner surface of the part it comes in contact with ; in which case the blood discharged is most usually somewhat coagulated, and deposits a sediment of a dark-brown color, resembling the grounds of coffee. It is rarely, if ever, an idiopathic disease.

A discharge of blood by urine, when proceeding from the kidney or ureter, is commonly attended with an acute pain and sense of weight in the back, and some difficulty of making water, the urine which comes away first being muddy and high colored, but towards the close of its flowing becomes transparent, and of a natural appearance. When the blood proceeds immediately from the bladder, it is usually accompanied with a sense of heat and pain at the bottom of the belly.

It is distinguished from the high colored urine attendant on many diseases, by the deposit of a coagulum to the bottom of the vessel, and by its staining linen of a red color.

The voiding of bloody urine is always attended with some danger,



particularly when mixed with purulent matter. When it arises in the course of any malignant disease, it shows a highly putrid state of the blood, and always indicates a fatal termination.

The appearances to be observed on dissection will accord with those usually met with in the disease which has given rise to the complaint.

*Treatment.*—In the treatment of this complaint we must be guided by the cause that has occasioned it. If it has arisen in consequence of some external violence or injury, such as a blow or fall, the bowels should be evacuated, quietude enjoined, and bayberry and slippery elm, equal parts, given at suitable intervals.

When voiding urine proceeds from a stone either in the kidney, ureter or bladder, it can only be cured by removing the cause. But the pain and the severity of the symptoms may frequently be moderated by the patient taking copiously of mucilaginous drinks, such as barley-water, slippery elm, solutions of gumarabic, a decoction of marsh-mallows; which preparations, should always, without fail, be well sweetened with honey, at the same time emollient enemas should be frequently applied.

When hæmaturia is symptomatic of some malignant, putrid disease, the treatment of the foregoing disease (vomiting blood,) may be appropriately applied.

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## HEMORRHOIDS, OR PILES.

THE piles consist of small tumors situated on the verge of the anus, which are sometimes separate, round, and prominent, but sometimes the tumor consists only of one tumid or varicose ring surrounding it. In some cases there is a discharge of blood from these tumors, particularly when the patient goes to stool, and then the disease is known by the name of bleeding piles; and in others there is no discharge, when it is called blind piles.

These affections may be occasioned by habitual costiveness, plethora, hard riding, excesses of various kinds, the suppression of some long accustomed evacuation, and by a use of strong aloetic purges; and are most apt to arise in those of a robust habit, and who lead a sedentary life. Pregnant women are frequently afflicted with the piles, owing to the pressure of the uterus upon the rectum, which interrupts the return of venous blood from that part, and the costive habit to which such women are usually liable.

The piles are sometimes accompanied by a sense of weight in the back, loins, and bottom of the belly, together with a pain or giddiness in the head, sickness at the stomach, and flatulency in the bowels. On going to stool, a pungent pain is felt in the fundament, and small tumors are perceived to project beyond its verge. If these break, a quantity of blood is then voided, and a considerable relief from pain is obtained; but if they continue unbroken, the patient in that case experiences

great torture every time he goes to stool, and feels an inconvenience even in sitting down on any hard seat. The tumors are sometimes considerable, and from pressure upon the bladder, produce much irritation and even pain in voiding urine.

Hæmorrhoids are by no means dangerous, but they often prove both troublesome and disagreeable. Hæmorrhoidal tumors are sometimes attended with a considerable degree of inflammation, which, proceeding to a suppuration, terminate in a sinuous ulcers, or a fistula.

Dissections of piles show that the tumors consist partly of the fine skin round the anus on the outside, and partly of the internal membrane of the gut. In general they are entire, but they sometimes have small openings in them through which the blood issues.

In the treatment of piles due attention should be paid to the cause from which they have arisen: and as costiveness is one of the most frequent, the bowels ought to be kept open and regular by medicines which will prove gently laxative, without irritating the rectum; and as a habit may be acquired, it will be right for the patient to observe stated times in the day for endeavoring to obtain motions, but without straining. Should none be procured by the aid of laxative medicines, the peristaltic motion may be excited by clysters of composition.

*Treatment.*—Thorough courses to cleanse the general system and local astringents, in the form of enemas, and ointments, will be found most serviceable to establish a radical cure. The injections may be composed of any of the vegetable astringents, to which may be added, No. 6, or a liberal portion of capsicum. This treatment should never be neglected when the bleeding tumors are seated high up. The advantages of this course of treatment in hæmorrhoidal affections, have established its virtue beyond cavil or dispute.

If a prolapsus ani attends the piles, the part is to be carefully replaced each time after going to stool, by laying the patient in a horizontal posture, and pressing gently with the fingers till the reduction is effected. Its return is to be prevented by avoiding the occasional causes as much as possible; and where it proceeds from a laxity of the rectum, besides applying a proper bandage, we may employ astringents, both internally, as advised under the heads of the preceding hæmorrhages, and also externally. Pledgets dipped in a strong decoction of galls, or oak bark, or any of the vegetable astringents, may be kept constantly to the parts as an external astringent, and they may be anointed from time to time with an ointment possessing similar virtues. As a general tonic, cold bathing may be employed with advantage.

In those cases where the discharge has become habitual, arising from plethora, this state of fulness must be prevented by moderate exercise on foot or in a carriage, by the use of a spare diet, and by carefully avoiding all strong liquors.

Those who are afflicted with piles should shun all such causes as may either increase the determination of blood into the hæmorrhoidal vessels, or prevent its return back from them, but more particularly riding on horseback.

During the continuance of this complaint the diet should be nutritious, consisting principally of vegetables, ripe fruit, jellies, broths, &c.

Fermented and spiritous liquors will be hurtful, and therefore the patient should only drink cooling acidulated liquors, water, or toast and water.

Where piles have been of long standing, the intestinal varicose tumors or hæmorrhoidal excrescences sometimes become so troublesome as to render their extirpation necessary either by ligature or excision.

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## CATARRHUS, OR CATARRH.

A CATARRH consists in an increased excretion of mucus from the membrane of the nose, throat, and bronchiæ, accompanied with a slight degree of fever, and other symptoms usually attendant thereon.

It attacks persons of all ages and constitutions, but more particularly the young, and those who have had any former affection of the lungs; and it may take place at any time of the year when there are sudden changes of the weather from heat to cold, and *vice versa*. In the former instance, the application of cold to the body seems evidently to be the remote cause of the disease; and in the latter it appears to depend on a specific contagion, having, in the years 1732 and 1733, spread in a progressive manner over the whole of Europe, and part of America, and in 1785 and 1803, over the whole of Britain. When the disease has prevailed epidemically in this manner, the term of influenza has been applied to it.

The proximate or immediate cause of the catarrh seems to be an increased afflux of fluids to the mucous membrane of the nose, fauces, and bronchia, in consequence of some degree of inflammation in these parts.

Catarrh is to be distinguished from the measles by the great mildness of the febrile symptoms, and by the absence of many of the symptoms accompanying the latter.

The disease usually comes on with a dull pain, or sense of weight in the forehead, a redness of the eyes, and a fulness and heat in the nostrils; which symptoms are soon followed by the distillation of a thin acrid fluid from these parts, together with a soreness in the throat, hoarseness, frequent sneezing, some difficulty of breathing, a dry cough, loss of appetite, general lassitude over the whole body, and chilliness; towards evening the pulse becomes considerably quickened, and a slight degree of fever arises.

In the progress of the disorder the cough is attended with an excretion of mucus, which at first is thin, white, and expectorated with some difficulty; but becoming gradually thicker and of a yellow color, is at length brought up with greater ease and less coughing.

Even where there is not much affection of the system, it often happens that the natural evening paroxysm is considerably increased; and, from restlessness and frequent coughing, the patient is prevented from sleeping till the morning, at which time a crisis takes place for the present,

and he then remains tolerably easy until the return of the evening paroxysm.

When the secretion of mucus ceases, the inflammation goes off also, so that a natural cure almost always arises in the disease.

Catarrh is seldom attended with fatal consequences, except when it either arises in elderly persons, attacks those of a consumptive habit, or has been much aggravated by some fresh application of cold, or by improper treatment; and it usually terminates in the course of a few days, if not neglected, either by an increased expectoration, or a spontaneous sweat. In some instances it however lays the foundation for consumption, or gives a tendency to asthma and hydrothorax. In others it becomes habitual, and is accompanied by great difficulty, particularly in the winter: such patients often suffer fatally from the accession of a sharp frost; their usual complaint immediately attacks them, and passes on to inflammation of the lungs, in which they are suffocated by the profuse effusion of viscid phlegm into the air-cells and tubes. Very old persons are apt to be carried off by comparatively moderate attacks of catarrh, which seemed to wear out their feeble portion of vitality merely by the slight interruption to the function of respiration, which the phlegm secreted in the bronchial passages occasioned; and they quietly sink into the sleep of death, without any urgent symptom or appearance of distress.

The inner membrane of the trachea usually appears on dissection, in fatal cases of catarrh, to be much inflamed, and its cavity to be filled with a considerable quantity of mucous fluid. The same morbid state is likewise communicated to the lungs which seem loaded with matter of a similar nature, producing suffocation.

*Treatment.*—All attacks of this disease, of whatever grade, readily yield to courses of medicine. Its milder forms require but little remediate attention—a few doses of composition daily during its continuance being all that is necessary. After the inflammatory symptoms have abated in severe cases, secretions from the lungs may be very much promoted by administering any of the pectorals, or cough medicine, arranged under the head of expectorants.

Sometimes there are to be met with, cases of catarrh which have continued many months, without any active severity, or purulent discharges. In such cases, fresh exposure should be avoided, and the patient be directed to make frequent use of a snuff composed of equal parts of bay berry and blood root.

If, notwithstanding these means, the cough should be dry, or be unattended with proper expectoration, and, together with a soreness, produce shooting pains through the breast and between the shoulders, accompanied with difficulty of breathing, flushing in the cheeks after meals, a burning sensation in the hands and feet, and other symptoms of hectic fever, no time should be lost, as there is reason to fear that tubercular suppurations will follow. Under such circumstances, the steps advised in the treatment of phthisis pulmonalis ought immediately to be adopted.

It is necessary here to notice a species of catarrh, with which persons advanced in life, and who have had frequent attacks of such affections, are apt to be afflicted. They are seized with a cough, which at length



becomes habitual and chronic, and continues for many years, proving extremely distressing. Its attacks are most common early in the morning, and the ill-fated patient, otherwise in good health, is thrown into fits of coughing, which last a long time, and are only terminated by a free expectoration taking place, when relief is immediately obtained. Next morning, however, the same distressing symptoms again seize the enfeebled patient, and thus the little strength he may have to support him through the fatigues of the day is nearly exhausted. In northern climates in particular, this species of catarrhal affection is very frequently to be met with in elderly people; and it seems to arise from an unusual quantity of mucus secreted in the bronchiæ, and perhaps in the lungs themselves, which by impeding respiration, or mechanically irritating these parts, produces the cough.

Courses of medicine with appropriate expectorants as before noticed is considered the best medication.

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### DYSENTERIA, OR DYSENTERY.

The dysentery is a disease in which there is an inflammation of the mucous membrane of the intestines, accompanied with frequent stools, severe griping pains, tenesmus, and some degree of fever; the stools, although frequent, being small in quantity, and without any natural fæces intermixed, but consisting principally of mucus, which is sometimes streaked with blood. When the natural fæces do appear, they are usually under the form of small, compact, hard substances.

In the medical schools of Europe, it has been taught that dysentery is of a highly contagious nature, and it undoubtedly is so where the sick are over-accumulated, and cleanliness and ventilation are not properly attended to; but it seems probable that the disease itself, under all ordinary circumstances of accommodation, is not of an infectious nature. It is reasonable to conclude that dysentery has rarely assumed an infectious character until it has prevailed for some time, and attacked a considerable number of persons: that is, not until the atmosphere has become charged with miasms emanating from the bodies of the sick, and their evacuations.

Dysentery occurs chiefly in the autumn, and is often occasioned by cold or moisture succeeding quickly to intense heat or great drought, whereby the perspiration is suddenly checked, and a determination made to the intestines. It is likewise occasioned by a use of unwholesome and putrid food, and by noxious exhalations and vapors; hence it appears often in armies encamped in the neighborhood of low marshy grounds, spreads rapidly, and proves highly destructive, particularly where there is an undue accumulation of sick, and a neglect of cleanliness and due ventilation. From the same causes it occurs frequently on board ships of war, and vessels transporting slaves from the coast of Africa—proving equally fatal. The free use of fruits has been assigned

as one of the causes productive of the disease in warm climates ; but very erroneously, for they have quite the opposite effect, and tend to preserve those from it who partake freely of them when perfectly ripe. A particular disposition in the atmosphere seems often to predispose or give rise the dysentery, in which case it prevails epidemically.

It frequently occurs about the same time with autumnal intermittent and remittent fevers, and with these it is often complicated. It is likewise frequently combined with typhus. A late writer supports the proposition that the simple dysentery is of itself never contagious, nor the intermittent and remittent forms of the disease ; that the combination with typhus is alone possessed of that property ; and this, he insists, originates not in the virus specific to the dysentery, but in the contagion of fever. Others have, however, given it as their opinion, that the contagion arises from the effluvia of the fæces of dysenteric patients, and not from their febrile perspiration or breath.

The dysentery is much more prevalent in warm climates than in cold ones ; and in the months of August, September, and October, which is the rainy season of the year in the West Indies, it is apt to break out, and to become very general among the negroes on the different plantations. The body having been rendered irritable by the great heat of the summer months, and being exposed suddenly to cold or moisture with open pores, the blood is thereby thrown from the exterior vessels upon the interior, so as to give rise to dysenteries.

The dysentery of tropical climates is usually found connected in some way or other with derangement of the liver ; but whether the one is a cause or a consequence of the other, observation has not accurately determined ; for sometimes inflammation of the liver precedes the rise of dysentery, at other times it follows in succession, and in some instances there are evident symptoms of both diseases existing from the commencement to the termination of the case.

Dysentery may readily be distinguished from diarrhœa by the absence of fever and tenesmus in the latter : the appearance of the stools, and the other symptoms, will further assist us.

An attack of dysentery is sometimes preceded by loss of appetite, costiveness, flatulency, sickness at the stomach, and a slight vomiting ; and comes on with chills succeeded by heat in the skin, and frequency of the pulse. These symptoms are in general the forerunners of the griping and increased propensity to stool which afterwards occur ; but it sometimes happens that the local affection is perceived first.

When the inflammation begins to occupy the lower part of the intestinal tube, the stools become more frequent and less abundant ; and in passing through the inflamed parts they occasion great pain, so that every evacuation is preceded by a severe griping, as also a rumbling noise, and there is unusual flatulence in the bowels.

The motions vary both in color and consistence, being sometimes composed of frothy mucus streaked with blood, and at other times of an acrid watery humor, like the washings of meat, and of a very fetid smell. Sometimes pure blood is voided ; now and then lumps of coagulated mucus, resembling bits of cheese, are to be observed in the evacuations, and in some instances a quantity of purulent matter is passed.

Sometimes what is voided consists merely of mucus matter, without any appearance of blood.

While the stools consist of these various matters, and are voided frequently, it is seldom that we can perceive any natural faeces among them, and when we do, they appear in small hard balls, which being passed, the patient is sure to experience some temporary relief from the griping and tenesmus.

It frequently happens, from the violent efforts which are made to discharge the irritating matters, that a portion of the gut is forced beyond the verge of the anus, which in the progress of the disease proves a troublesome and distressing symptom, as does likewise the tenesmus, there being a constant inclination to go to stool, without the ability of voiding any thing, except perhaps a little vitiated mucus, or a small quantity of blood.

More or less of fever usually attends with the symptoms which have been described, throughout the whole course of the disease, where it is inclined to terminate fatally, and is either of an inflammatory or putrid tendency. In the other case the febrile state wholly disappears after a time, while the proper dysenteric symptoms probably will be of long continuance.

When the symptoms run high, and are accompanied with violent irritation of the whole intestinal tube, great prostration of strength, strangury, and hicough, or with a putrid tendency, and fetid and involuntary discharges, the disease often terminates fatally in the course of a few days: but when they are more moderate, it is frequently protracted to a considerable length of time, and induces great emaciation and debility, but goes off at last by a gentle perspiration diffused over the whole body; the fever, thirst, and griping then ceasing, and the stools becoming of a natural color and consistence.

A great degree of tenesmus, severe griping pains, frequent inclination to go to stool and but little voided, much depression of strength, fœtor of the evacuations, a tense abdomen, violent fever, cold clammy sweats, coldness of the extremities, aphthæ, hicough, petechiæ, and a weak irregular pulse, are to be regarded as very unfavorable symptoms. Whereas a gentle and universal diaphoresis, moderate fever, the evacuations becoming less frequent and more of a natural consistence, and a gradual diminution of the griping and tenesmus, are favorable appearances. The disease is very liable to a relapse from any exposure to cold, wet, or fatigue.

Upon opening the bodies of those who die of dysentery, the internal coat of the intestines (but more particularly the lower bowels,) appears to be affected with inflammation and its consequences, such as ulceration, erosions, contractions, scirrhusities, and gangrene. The peritonæum and other coverings of the abdomen, in many instances, have likewise an inflammatory appearance.

To defend the inner coat of the intestines from the acrimony of its contents, and to counteract the vain attempts at evacuation, it will be necessary to give something to be discharged. Here then we should not only administer mucilaginous substances, such as solutions of gum acacia in milk, preparations of barley, rice, arrow-root, &c., by the

month; but we should likewise inject a clyster of a similar nature three or four times in the course of the day. All vain attempts to go to stool, as also all violent strainings in evacuating the contents of the bowels, ought carefully to be avoided by the patient throughout the disease; for if obedience be paid to every seeming call of nature, the straining which ensues will be highly detrimental, as little or nothing, except mucus and blood, comes away in four out of five efforts.

*Treatment.*—There are four morbid conditions present in this disease that point out the general indications of remediate management: first, inflammation to a greater or less extent of the mucous membrane of the intestinal canal; second, a general irritation of the vascular system; third, a torpor of the cutaneous exhalents; and fourth, a disordered state of the functions of the liver. In estimating the relative importance and urgency of these indications, it is to be observed, that torpor of the cutaneous exhalents and derangement of the liver, are generally antecedent to the intestinal inflammation, as well as to the febrile reaction.

It seems reasonable, therefore, to conclude, that the restoration of these functions in the early or commencing stage of the complaint, constitutes a primary object in the treatment of the affection, which is indeed confirmed by the experience of every Thomsonian in the land; for in proportion as we succeed in effecting this purpose, we equalize the circulation, lessen the determination of the blood to the bowels, and subdue at once the general febrile excitement, and thereby, the local disease in the intestines. In all cases, therefore, where this febrile state exists, the pulse firm and quick, or tense and frequent; our rule of practice is perfectly plain. A course of medicine, or an emetic daily, if the baths are not practicable, should not be omitted. To subdue, then, intestinal inflammation should be the first step in the treatment; and the adoption of the general rule laid down in all febrile excitements, is to be regarded here also, as most salutary. At the same time the inflammatory action of the mucous surface of the bowels is diminished, the deranged condition of the liver will be abated.

Castor oil, or some mild aperient medicine should be given to aid the syringe in the liberation of the bowels of all matter which may act as extraneous, irritating substances. If the intestines are yet very tender and sensitive, the following compound may be given with great advantage: bayberry, hazel and hemlock, each seven grains, or as much as will lay on the point of a pen-knife; slippery elm, half tea-spoonful; hot water should be added to this combination, and the whole stirred and well sweetened with loaf-sugar. This may be repeated every two hours, or oftener, according to the urgency of the circumstances. When the intestines have been much enfeebled and the frequency of the dejections lessened, a small quantity of No. 6, or good French brandy, may be added to the mixture. The tonic cordial will be found almost indispensable in the subsequent treatment of this affection.

In the milder forms of this malady, however, the dysenteric cordial, No. 6, or the vegetables in combination, as recommended above, repeated at proper intervals, will alone be found amply sufficient to establish a restoration.

In the first stage of dysentery, a use of ripe fruits will be proper; but



in a more advanced period, where any morbid acidity seems to prevail in the stomach, they should not be recommended.

Every sort of food which readily tends to putrefaction ought carefully to be avoided throughout the whole course of the disorder, as also all kinds of fermented and spirituous liquors; supporting the patient's strength with preparations of barley, rice, sago, flour, panado, Indian arrow-root boiled in milk, occasionally varied for gelatinous broths. During the state of convalescence, Port wine or Madeira, or even a moderate quantity of brandy, properly diluted with water, may be allowed.

Persons recovering from the dysentery should observe the greatest caution and regularity in their mode of living, and they should go warmly clothed by wearing flannel next the skin, as the disease is very liable to relapse from any fresh exposure to cold, wet, damp night air, or sudden atmospherical vicissitudes.

The importance of warm clothing, both in the prevention and cure of bowel complaints, is too obvious to require my saying much on the subject; I will therefore only observe, that warmth ought not to be a secondary object; on the contrary, it ought to be the first; for if a patient only wear his ordinary clothing, he will receive comparatively but little benefit from any medicine. A waistcoat of flannel or fleecy hoseiery next to the skin ought always to be worn, as likewise sliders of the same; and these should be laid aside with caution, and by slow degrees. The writer of a small tract on dysentery lays much stress on swathing the abdomen with flannel bandages, as being the best mode of confining a certain degree of heat over that part of the body which is the seat of the disease; and this practice is reported by Sir James McGregor to have been found very serviceable in many cases, both as affording an equal support, and keeping up a due degree of warmth on the surface of the abdomen.

Dysentery being by most considered of a very contagious nature, every precaution should be taken, particularly in situations where many people are crowded together (as in camps, and on board of ships,) to prevent the disease from spreading. The sick ought immediately to be separated from those in health, or who labor under any other disorder; they should be lodged, if possible, in distinct rooms or tents, and the strictest attention should be paid to cleanliness, taking care to remove the stools as soon as voided, and to have them quickly buried; to ventilate the chamber sufficiently, and sprinkle it now and then with a little warm vinegar; and to change the linen both of the body and beds frequently.

## NERVOUS DISEASES.

*General Observations.*—The nervous system gives to organized matter all the peculiar functions of animal life, and in its higher states of development, renders it a fit recipient for the powers of reason and moral feeling. In a state of health, or freedom from irritation, it qualifies man for the enjoyment and communication of happiness—when disordered, it may render him the most deplorable and abject of created beings. Exalted mental endowments, equanimity, and benevolence, may be converted into imbecility, waywardness, and misanthropy; meek piety into the wildness and intolerance of fanaticism; confidence into universal mistrust, and friendship into hatred, by morbid conditions of this component of the human organization.

The chronic diseases of the nervous system may be divided into two classes—viz: 1. Those in which the sensorial or muscular functions are morbidly affected, either separately or conjointly; 2. Those in which the intellectual and moral powers are disordered.

The first of these classes comprehends a great variety of affections—characterized either by a *perversion*, or a *morbid activity*, or *abolition* of one or more of the *sensorial functions*; or by spasm, or convulsion, or paralysis, of a greater or less portion of the *muscular system*.

The examples of singularly *perverted* sensorial function are numerous. Reil mentions a case in which the whole surface of the body was insensible to heat or cold, and incapable by the touch of distinguishing hardness from softness in bodies. Dufour gives an account of a similar case. Sauvages relates the case of an individual who always heard two voices, one an octave higher than the other, when any one spoke to him. Individuals have lost the power of distinguishing colors; and some have been much harassed by various visual allusions.

Instances of very distressing morbid increase of sensorial power are frequently met with. The sense of hearing has become so exceedingly acute, that the weakest sounds gave rise to pain and uneasiness, and the same has been observed with regard to the other sensorial powers. In some cases, nervous disorder manifests itself by excruciating pain in some part of the body, as in the various forms of neuralgia.

The sensorial functions may also be weakened or entirely *destroyed*, by affections seated in the nervous system. When such affections are local, one sense alone may be obliterated; but when the disorder implicates the whole of the sensorium commune—the brain—all the sensorial powers will be suspended. This general state of nervous oppression or inactivity is attended with manifest respiration and arterial action, and constitutes what is termed *coma*; a condition which must not be confounded with *syncope*, or *asphyxia*. These latter affections are not accompanied by any perceptible respiratory and arterial actions, and although like coma, the immediate consequence of impeded cerebral function, yet they are manifestly dependent on different conditions of the encephalic circulation. The pathology in relation to this subject, however, will be illustrated hereafter.

When the nervous irritation passes upon the muscular system, it gives rise to irregular, spasmodic, or convulsive actions, either in one, or in

several, or in the majority of the muscles of the body. These convulsive or spasmodic muscular contractions, are divided by authors into *tonic* and *clonic*. In the former the contractions are permanent, as in tetanus; in the latter they occur in quick alternation, with relaxations, as in hysteria and epilepsy. There exists, however, no essential difference between these varieties of convulsive muscular action. They indeed often occur at the same time in the same individual, some muscles remaining in a state of firm contraction, whilst others are alternately relaxed and contracted. In general, however, convulsions of the *clonic* form are attended with less danger than those of the rigid or *tonic* spasmodic affections. The former are frequently the result of a mere temporary sympathetic irritation of the brain, from causes of a transitory character, or susceptible of being removed; whilst the latter usually depend on a more intimate affection of the nervous system, from causes over which we have little or no control. Convulsions, or general spasmodic affections of the voluntary muscles, must, therefore, be regarded as the external manifestations of certain morbid actions or conditions of the brain and nerves. The brain, or spinal marrow, is the immediate source of the muscular irritation; and the violence, duration, character, and extent of the convulsive affection, depends on the nature of the cause, and the constitutional habit of the patient. In some instances, the cerebral affection which gives rise to the convulsive muscular contractions, is so great as to produce a temporary suspension of consciousness, and of the sensorial functions. In others, as in tetanus and chorea, the mind and sensorial powers remain unaffected until the disease becomes inveterate.

Spasmodic contractions are often confined to one part, and indeed frequently to a single muscle. Of this kind are, tonic spasm of the muscles of the eyes, producing *strabismus*; or convulsive action of these muscles, giving rise to rolling of the eyes, spasm of the muscles of the lips and face, giving an expression of malignant laughter to the countenance; tonic contraction of the muscles of the jaws, spasmodic affection of the œsophagus; convulsive action of the diaphragm, producing hiccough, tonic spasm of the erector muscles of the penis, giving rise to painful, and sometimes protracted *priapism*; tonic or clonic spasmodic contractions of the abdominal muscles; and other local spasms or cramps of the voluntary muscles, are among the most common affections.

The *involuntary muscles* also are subject to spasmodic affections; but these appear to depend more frequently on some local irritation, than upon a reflected cerebral impression. The whole arterial system is sometimes affected with clonic convulsive action. This is particularly apt to occur from sudden and violent mental agitation; from gastric irritation; and from organic affections of the heart. The stomach, the intestinal tube, the common gall duct, the urethra, uterus, &c. are all particularly liable to painful spasm.

The second class of nervous diseases, those in which the cerebral irritation produces mental derangement, presents a variety of modifications, both in relation to the degree, and the particular character of the hallucination. In some instances, there is a general derangement of all the intellectual faculties, with violent excitement of the passions; occasion-

al exacerbations of raving delirium and agitation, (*mania*.) In other cases, the insanity is only partial—the patient retaining the regular powers of his understanding on all but a few, or a single subject, (*monomania*.) Sometimes the reasoning powers become defective or imbecile, and the memory weak or obliterated, a state of mind which is most frequently met with in very old people, and in such as have suffered frequently from convulsive affections, as epilepsy, chorea, or apoplexy. In some instances, almost every trace of intellectual power is wanting, either from a congenital defect in the cerebral organization, or from diseases or accidental causes affecting the brain. These varieties of mental disorder sometimes pass into each other, and present an almost infinite diversity in their particular phenomena. They may arise from causes acting directly on the brain, and from impressions conveyed sympathetically to this organ from remote visceral affections. Whatever be the nature of the remote cause, however, insanity of every variety is always the immediate consequence of some peculiar dynamic or organic disorder of the sensorium commune. Under the particular head of these affections, I shall enter more fully into the etiological consideration of this subject.

## APOPLEXY.

APOPLEXY may be defined, a sudden loss or suspension of the animal functions, with a slow and full pulse, laborious breathing, generally attended with stertor; whilst the organic or vital functions continue with little or no perceptible disturbance.

In some instances, the apoplectic attack comes on suddenly without any precursory indications of its approach. Occasionally, indeed, patients feel unusually well for some time previous to an attack of this affection, and this is most apt to be the case in individuals of a gouty habit. Much more frequently, however, various premonitory symptoms, indicative of cerebral disturbance, precede the attack; and amongst these the following are the most common: vertigo; a dull and deep-seated pain, or sense of weight in the head, particularly on stooping or suddenly turning the head round; a turgid state of the veins of the head; throbbing of the temporal arteries; ringing in the ears; inability to articulate distinctly; dimness of sight; transient obtuseness of hearing; sparks and flashes of light before the eyes; bleeding of the nose; drowsiness; confusion of ideas, manifested by incoherent talking; disturbed and heavy sleep; loss or unusual weakness of the memory; general sluggishness, both of body and mind; irregular spasmodic contraction of the muscles of the face; and, occasionally, transient pains in the pit of the stomach, and nausea. In some instances, a numbness is felt in the fingers or in one side of the body shortly before the attack supervenes. In general, the symptoms which announce the approach of an apoplectic attack, indicate an unusual determination of blood to the head. Of



these symptoms, however, vertigo, ringing in the ears, dimness of sight, and pain and heaviness in the head, are by far the most common precursors of an attack of this disease.

The duration of these symptoms is extremely various. In some cases, they do not continue more than a few hours before the attack ensues; in others, they occur with occasional remissions or intermissions, for several weeks or months, and even years. Occasionally, the most alarming of the foregoing symptoms occur and continue for a longer or shorter time, without terminating in an attack of this disease. The premonitory symptoms often become considerably aggravated immediately before the apoplectic attack supervenes. The fullness, weight, and pain in the head, become suddenly very severe; a sense of tension and drawing is felt in the muscles of the back of the neck; and, in some instances, pain in the epigastrium, with nausea, occurs just before the attack.

In some cases the apoplectic attack comes on by a *sudden* deprivation of all sensorial power and motion; the patient sinking almost instantaneously into a state of profound stupor, resembling deep and heavy sleep, from which it is impossible to rouse him in the slightest degree. This mode of seizure constitutes what authors term *perfect or strong apoplexy*, and generally terminates fatally in a very few hours, and sometimes in less than an hour.

In other cases, the patient is seized with sudden deep-seated pain in the head; tremor of the extremities; confusion of ideas; nausea or vomiting; and vertigo. He then becomes insensible, and sinks down as from syncope; in a short time however, he recovers sufficiently to converse, and, perhaps, to walk about, but still complains of pain and other unpleasant sensations in the head, with confusion of the mind and giddiness. In the course of a few hours after this temporary recovery, the brain becomes gradually more and more oppressed, until complete insensibility is induced, and the patient lies in a state of deep coma.

Sometimes paralysis of one side suddenly occurs, with loss of speech; pain in some part of the head; slowness and confusion of the mind; and vertigo—the sensorial functions and consciousness remaining. By degrees, however, the brain becomes more oppressed, and the sensorial powers gradually decline, until profound apoplectic stupor ensues.

In whatever way the apoplectic attack comes on, the following phenomena attend its course, and serve to distinguish it from the other forms of soporose affections. Immediately after the accession of the fit, the pulse and respiration are weak and often scarcely perceptible. Both, however, soon recover from the first shock; the pulse becomes full, slow, regular, and often hard; and the respiration slow, oppressed, interrupted or irregular, and *generally* stertorous. Some writers contend, that in true apoplexy, *stertorous* breathing is invariably present; but this is not confirmed by general experience. In violent instances, expiration is attended with a puffing motion of the lips, and a frothy saliva is blown out with a sputtering noise. The face is sometimes livid and of a turgid appearance; more frequently, however, it is pale and somewhat bloated. In some instances, the eyes are blood-shot; in others, they are dull, glassy, and fixed, or rolling about in their sockets. In general, the pupils are considerably dilated; and in some cases they are perma-

nently contracted. Dr. Cook states, that he has seen instances in which the pupils were almost entirely closed.

The extremities are usually below the natural standard of temperature, but the skin about the body, and particularly of the head, is warm. The jaws are generally spasmodically closed; sometimes they remain widely open. The power of swallowing is occasionally, in very violent cases, entirely destroyed; but in most instances, though greatly impeded, it remains to a degree sufficient to enable the patient to swallow small portions of fluids. In all instances, very considerable torpor of the bowels exists; and this is sometimes so great as to resist every effort to evacuate them by cathartic remedies. Clammy sweats usually break out about the head and neck, and the same sometimes occurs on the extremities. In moderate cases, the temperature of the skin, and appearance of the countenance, do not differ from their natural condition; and in such cases, the power of deglutition is generally sufficiently strong to permit the easy administration of medicines by the mouth. This is most apt to be the case in what is termed the apoplectic stage of hydrocephalus. Towards the termination of fatal cases, the pulse becomes small, irregular, and frequent; and the respiration slow, short, and interrupted by long intervals.

If the disease does not end in death, it may terminate,

1. In the perfect restoration of all the suspended functions, and the enjoyment of good health. This favorable issue may be expected when the various organs gradually resume their respective functions, more especially if consciousness and a command over the voluntary muscles gradually return. The tongue is often the first organ that obeys the commands of volition; after this the upper extremities, then the inferior ones, resume their power of motion; the muscles of the face being in general the last to return to their regular action. Not unfrequently, during the progress of recovery from an attack of apoplexy, general and pretty free perspiration, or diarrhœa, and in some instances active vomiting, occurs. Sometimes sanguineous evacuations attend the favorable termination of the disease; such as epistaxis or hæmorrhoidal and menstrual discharges.

2. In *paralysis of certain parts* of the body, with a restoration of health in all other respects. More or less paralysis, indeed, remains after the majority of apoplectic attacks. In some instances the palsied muscles soon resume their natural power; in others, they slowly recover a certain degree of power, without, however, ever regaining their natural state of activity; whilst in some cases little or no perceptible diminution of the paralytic affection ensues—the affected muscles remaining permanently palsied. In most cases in which permanent paralysis is left by an attack of apoplexy, the mind becomes very perceptibly weakened.—The power of comprehending complex ideas and the memory are often almost entirely obliterated in persons who recover from a severe apoplectic seizure. Paralysis from apoplexy is usually of the hemiplegiac variety; but in some instances, the palsy is confined to a single member or to certain muscles, more especially to such as derive their nerves immediately from the brain, as those of the face.

3. The apoplectic fit may terminate in a general febrile condition after

the sensorial oppression has passed off. In some instances, strong *synochal* fever is developed in proportion as the nervous functions are restored; in others, fever of a *typhoid* character, with manifest gastric irritation, ensues. Several years ago, I was called to a gentleman who a few minutes before had been seized with a fit of strong apoplexy. Under the usual treatment he gradually recovered so as to be able at the end of the fourth day to sit up and converse without difficulty. On the next day strong febrile reaction, with a hot and dry skin supervened, and notwithstanding the most vigorous antiphlogistic measures, violent delirium ensued, and continued for several days before it subsided. The patient eventually recovered.

The diagnosis of apoplexy is not, in general, attended with difficulty. Where a loss of consciousness of the sensorial functions and voluntary motion suddenly come on, and continue with an active state of the pulse and full respiration, the case must be regarded as apoplexy. From *syncope* and *asphyria*, this form of soporose disease is distinguished by the absence or almost imperceptible action of the pulse and respiration in the two former affections. It is sometimes difficult, however, to distinguish apoplexy from deep intoxication. The habits of the individual, the smell of his breath, and the general relaxation of all the muscles, particularly those of the jaws and the sphincters, will generally lead to a correct diagnosis on this point. Dr. Cook observes, that "as the treatment for true apoplexy would not be improper for intoxication, a mistake respecting the cause would not be hurtful to the patient."

The duration of the apoplectic attack varies from a few minutes to two or three days. In some instances, death almost immediately follows the apoplectic seizure. This indeed has been doubted by some. Dr. Cook thinks that the cases of sudden death which have been ascribed to apoplexy, depended, probably, on some affection of the heart or large vascular trunks within the chest. There is good reason for believing that this has sometimes been the case; but it is by no means improbable, that sudden and extensive extravasations of blood into the substance of the brain, particularly in that part of this organ which gives rise to the respiratory nerves, may suddenly abolish, not only the sensorial powers and voluntary motion, but also the action of respiration, and thus produce speedy death. Death from this affection, however, seldom takes place before the second or third hour from the attack. In most instances, indeed, from twenty to thirty hours, and in some cases five or six days pass, before the fatal termination occurs.

Besides the unfavorable symptoms mentioned above, there are various others which are said to indicate especial danger. When the attack commences with sudden severe pain in the head, or with vomiting, or a general spasmodic rigidity of the muscles, danger is to be apprehended. General, clammy, and profuse perspiration, with a small and frequent pulse, is also a peculiarly unfavorable sign.

The prognosis is also influenced by the character of the exciting cause, and still more by the presence or absence of that corporeal habit, which experience has shown to predispose especially to this affection.

When there are evident manifestations of some degree of sensibility remaining; such as contraction of the pupils from the stimulus of light;

some power of swallowing, &c., together with free and regular respiration, without stertor or discharge of saliva from the lips; a warm and general perspiration; the occurrence of sanguineous discharges, particularly from the nose or hæmorrhoidal vessels; diarrhœa, or a copious flow of urine; reasonable hopes may be entertained of a favorable issue of the case.

It was formerly supposed that apoplexy from the rupture of a vessel, and extravasation of blood into the substance of the brain, is always necessarily fatal. This opinion has, however, been satisfactorily controverted by the experience of many of the ablest pathologists of the present day. The observations and dissections of Riobé, Rochoux, Cruvellier, Bricheteau, and Serres; and we may add, of Baillie and Sir Astley Cooper, place the occasional recovery from strong apoplexy beyond all doubt. From the numerous dissections made in the Parisian hospitals by the French pathologists just mentioned, we learn, that when sanguineous extravasation into the substance of the brain does not soon terminate in death, a membranous, vascular structure is formed around the coagulum, and that coagulum is afterwards absorbed by the vessels of this membrane or cyst. In the progress of time, this cyst itself becomes absorbed, and leaves a yellowish cicatrix, or laminated, cellular structure, which in some instances is found to contain a small portion of reddish serum.

Sir Astley Cooper thinks, that in apoplexy from sanguineous extravasation, the blood never becomes absorbed, but that the brain gradually acquires the power of bearing its pressure, and that thus the general symptoms which are produced at the first moments of extravasation gradually diminish. That the brain is capable of accommodating itself in some degree to unnatural pressure from extravasation, or other causes, cannot be doubted. I knew an instance of considerable depression of a small portion of the superior and lateral part of the os frontis from a fall. The child remained in a state of apoplectic insensibility for about twelve hours, and very gradually recovered a state of perfect consciousness in about three days. The depression still continues, and, with the exception of occasional headache, no inconvenience appears to remain from the accident. The numerous and well attested facts that have been brought to light by the authorities already mentioned, are nevertheless sufficient testimony to establish the truth of the occasional absorption of sanguineous effusions in the brain. Bricheteau and Riobé have reported numerous dissections, all proving, not only the resorption of the effused fluid, but a reunion of the lacerated surfaces afterwards by a kind of cicatrisation.

A variety of circumstances, both in relation to the constitutional habits of individuals, and extraneous influences, appear to predispose to this affection. Of these predisposing causes, the following are the principal:

1. *A peculiar conformation of the body*; consisting in a large head; thick short neck; broad shoulders; ample chest; florid, and full face; short stature; globular abdomen, with a tendency to plethora and obesity. Such individuals are often subject to hæmorrhage from the nose, as well as to sensations of weight and fulness in the head, particularly



on stooping, or making strong corporeal exertion. When they sleep with the head lying low, they are restless, disturbed with dreams, and the respiration is heavy and sonorous. Such a corporeal structure constitutes, no doubt, in many instances, the hereditary predisposition to this disease, noticed occasionally in particular families. It is to be presumed also that a peculiar condition of the intimate organization may, in some cases, establish a constitutional tendency to inordinate determinations to the head, and to the consequent occurrence to apoplexy and other cerebral affections.

2. *Age*.—The observation of Hippocrates, that apoplexy occurs chiefly between the fortieth and sixtieth years of age, still holds good at the present day. Instances of apoplexy occur indeed at a much earlier period of life, particularly between the thirtieth and fortieth years; but in a general estimate it will be found that a very large majority of cases happen after the age of forty. Rochoux states, that out of sixty-three cases of this disease, two occurred between the ages of twenty and thirty—eight between thirty and forty—seven between forty and fifty—ten between fifty and sixty—twenty between sixty and seventy—twenty-three between seventy and eighty—and one between eighty and ninety years of age. It would appear from this statement, that apoplexies occur more frequently *after* the age of sixty than at any previous period; and this corresponds with the sentiments of Cullen and Portal. The greater liability to apoplexy at an advanced period of life, cannot be referred to a mere increased tendency to a preternatural determination of blood to the head; for in infancy this tendency is acknowledged to be generally greater than at any subsequent period of life; and yet apoplexy at this early age is an extremely rare occurrence. Some other circumstances, therefore, connected with advanced age, must be the cause of this greater aptitude to the disease. Many pathologists have ascribed this increased tendency to apoplexy in old people, to an ossified state of the cerebral vessels; but this opinion is not verified by post mortem examinations. Others, with more plausibility, have supposed that it may depend on a weakened state of these vessels, similar to that morbid condition of the arterial coats which favors the occurrence of aneurism. It is probable, however, that this predisposition depends on various circumstances of a general character connected with old age, independent of a morbid condition of the cerebral vessels.

3. *Whatever tends to produce general plethora*, or to keep up a preternatural determination of blood to the brain, increases the liability to apoplexy. A full and nourishing diet; the habitual use of stimulating drinks, particularly in connection with an inactive and sedentary course of life, are especially calculated to increase the predisposition to this disease. Immoderate venereal indulgences at an advanced age; frequent, and long continued warm bathing; a sudden change from an active or laborious to a quiet or indolent course of life; intense and protracted study; and the free use of strong coffee, are mentioned among the predisposing causes of this disease.

4. Various organic affections, such as aneurism of the aorta; hypertrophy of the heart; visceral indurations; and tumors about the neck, increase the liability to apoplexy.

*The exciting causes* of apoplexy are very numerous. In general, whatever produces inordinate determinations of blood to the head, or impedes its free return from the brain to the heart, may give rise to this disease.

Over-distension of the stomach by immoderate eating, more especially if the ingesta are stimulating and of difficult digestion, and the digestive powers weak, is one of the most common and powerful exciting causes of apoplexy. The intemperate use of spirituous liquors, violent exertions in lifting, much straining in evacuating the feces, strong fits of coughing, sneezing, and great exertions in declaiming, playing on wind instruments, singing, laughing, or speaking, by causing sudden and strong determinations of blood to the head, may produce this disease in individuals predisposed to it. Exposure to the direct rays of the sun in warm climates, give rise to that sudden and fatal affection called *stroke of the sun*, and which is generally regarded as apoplexy. Extreme cold also is capable of producing this affection, by diminishing the circulation in the external vessels, and causing strong internal congestions. Violent and sudden mental excitement, rage, excessive joy, terror, and deep sorrow, have been known to produce this disease. The suppression of habitual discharges, whether sanguineous or serous, may give rise to apoplexy. This is particularly the case with habitual hæmorrhoidal discharge or epistaxis in plethoric subjects. The healing up of old ulcers has a tendency also to produce this disease in persons otherwise predisposed to it. Stoll mentions the sudden disappearance of œdema of the feet as an exciting cause of apoplexy. Women in the puerperal state, are in some degree liable to apoplexy. Dr. Davis, of London, states that he has met with four or five apoplectic seizures and consequent hemiplegia, in puerperal women. Tumors or visceral indurations in the abdomen, by pressing on the aorta, may give rise to this disease. Morgagni relates an instance which was produced apparently by an enlarged spleen pressing on the aorta.

Apoplexy may also occur in consequence of the repulsion of chronic cutaneous diseases; and it is frequently the result of metastasis of gout. Authors mention also translations of rheumatism, erysipelas, and of other exanthematous affections among the exciting causes of this disease. I knew an instance in which it appeared to be brought on by a very severe attack of mumps. Violent rigors or chills, particularly the severe and protracted chills of intermittents, sometimes give rise to apoplexy. I have known several fatal instances of this kind. In one case, I stood by the patient when he was seized with the chills; in about ten minutes after they commenced he became insensible; fell into convulsions, and quickly passed into a profound apoplectic stupor, from which he did not recover. The patient was an old, corpulent, and very plethoric man. Intestinal irritation may also cause so strong a determination of blood to the brain as to give rise to this affection.

Besides the foregoing causes, which operate apparently by causing undue determinations to the vessels of the brain, apoplexy may also be produced by causes that impede the free return of the venous blood from the head to the heart. Stooping, or other situations in which the head remains in a depending position; wearing tight cravats, and turn-

ing the head round to look back, by which the jugular veins are in some degree compressed; impeded circulation through the lungs; *cardiac diseases of the heart*; tumors on the neck, or in situations where they may press upon the veins which convey the blood from the head, are the principal of these causes.

Authors mention also excessive evacuations among the occasional causes of this disease. Boerhaave states, that he knew an instance of apoplexy apparently produced by an excessive hæmorrhage from the nose. The tendency of excessive sanguineous evacuations to produce soporose or cerebral oppression very similar to apoplexy, has already been adverted to under the general head of hæmorrhages. The work of Marshall Hall, referred to in that place, gives some very interesting observations on this subject. It is certainly a very remarkable circumstance, and not accordant with the present received pathology of apoplexy, that entire insensibility, with stertorous breathing, sometimes results from profuse hæmorrhage. Diabetes sometimes terminates fatally, under symptoms strongly resembling apoplexy; and the same termination has been noticed in excessive diarrhoea and cholera. Peculiar atmospheric constitutions have also been ranked among the exciting causes of apoplexy; and from causes of this kind, this disease has at times prevailed epidemically. Besides the authorities referred to below, we have also the more recent testimony of Weikard, and of Jahn, in confirmation of this fact; and Baglivi mentions the epidemic occurrence of this affection. Richter states, that a humid, cold, and variable state of the atmosphere, appears to be most favorable to the occurrence of apoplexy. It is not improbable, however, that such a condition of the atmosphere depends more upon its electrical and barometrical state, than on its relative degrees of humidity and temperature. This atmospheric tendency to produce or favor the production of apoplexy, is sometimes limited to a few days of continuance. Thus Thilenius states, that in the course of a few days, nine persons were seized with apoplexy in one district.

Various organic affections of the brain and its meninges, and the narcotic poisons, are also enumerated among the exciting causes of this disease. Gregory doubts whether these latter can, with propriety, be considered as exciting causes of apoplexy. As they tend, however, to cause strong congestion in the vessels of the brain, they may, no doubt, excite this affection in persons otherwise predisposed to it, as other causes do that strongly determine the circulation to the head.

What is the immediate cause of the abolition of sensorial power and voluntary motion in apoplexy? Pathologists are far from being unanimous in their answers to this question. Some maintain, that pressure on the cerebral mass is always the immediate cause of the characteristic phenomena of this disease; others suppose that they depend not on pressure, but simply upon interrupted circulation in the brain; whilst some believe that the encephalic effusions are the consequence of a previous morbid change in the brain, upon which the loss of sense and motion depends. Some pathologists confine the term apoplexy strictly to sanguineous extravasation within the brain; others include *serous* effusions among the immediate causes of the disease; and many believe, and cor-

rectly too, that mere vascular turgescence, without effusions of any kind, frequently produces apoplexy.

From a careful examination of every thing that has been written on this subject, it appears clear that the opinion which assigns the characteristic phenomena of apoplexy to *pressure* of the brain, is the correct doctrine on this point.

Post mortem examination detects in those who die of apoplexy one or more of the following phenomena:—1, vascular turgescence of the brain; 2, sanguineous extravasation into the substance of the brain; 3, serum effused into the ventricles or upon the surface of the brain; and 4, no cognisable cerebral disorder whatever. Of these four conditions, the first only ought, I think, to be considered as primary or essential; the others being consecutive, and not immediately concerned as a cause in the apoplectic seizure.

When blood flows more rapidly into the arteries of the brain than it can be returned by the veins, preternatural distension of the cerebral vessels must be the consequence; and this general vascular turgescence must exert an unusual degree of *pressure* on the cerebral mass.

That such vascular engorgement and consequent pressure on the brain is capable of producing all the peculiar symptoms of apoplexy, admits of no doubt. In some instances of fatal apoplexy, the vessels of the brain are found so much engorged with blood, as to render even the smallest branches very conspicuous, and to give a more or less deep red tint to certain portions of the cerebral mass without any sanguineous or serous effusions. Richter says that an extremely congested state of the cerebral vessels is sometimes the only morbid condition visible within the head. Bricheteau also observes, "that we often find a general turgescence of the cerebral vessels, which congestion causes a general pressure on the encephalic mass, sufficient to extinguish the nervous influence, and destroy life." Morgagni has related a case in which he found, on dissection, the whole vascular system of the brain extremely engorged with fluid blood. Dr. James Johnson, in commenting on this case observes—"that apoplexy is frequently produced by *turgescence* of the vessels alone, was believed in ancient times as well as in modern. It is, indeed, reasonable to suppose, that in the majority of apoplectic recoveries, *congestion* only had taken place in the vessels of the brain.—But if congestion gives rise to the most favorable cases, it appears capable of producing the most desperate and instantaneously fatal ones also." Dr. Fouquier also, has reported a case of fatal apoplexy, which was manifestly the result of mere sanguineous engorgement of the brain. "The exterior vessels of the brain and those of the choroid plexus were much engorged with blood;" and the interior of the cerebral mass, when sliced off, presented a multitude of red points. Neither serous nor sanguineous effusion was present.

Strong and sudden sanguineous engorgement of the cerebral vessels is, probably, *always* one of the first morbid conditions in the occurrence of apoplexy—the immediate result of diminished vital resistance in the vessels of the brain, and a preternatural afflux of blood to these vessels.—This vascular turgescence may pass off again under proper remediate measures; or it may terminate speedily in sanguineous extravasation



into the brain; or continue, finally, without any effusions, until it terminates the patient's life. What is usually termed *serous apoplexy* is perhaps only one of the terminations of apoplexy from vascular turgescence. A sudden violent determination of blood to the brain, and consequent cerebral compression, may immediately destroy all sense and voluntary motion. If the vessels be not relieved by extravasation or by immediate applications, they may, in the course of some hours, relieve themselves by *serous effusion*, as they do in acute hydrocephalus; and this effusion must then become a secondary but permanent cause of cerebral compression. It is unnecessary here to adduce any arguments in support of this pathology of serous apoplexy. We often meet with striking examples of sudden serous or lymphatic effusions from vascular engorgement. Every one has heard of the affection usually called apoplexy of the lungs. Sudden and often fatal effusions of this kind occur into the substance of the lungs from violent engorgement of its blood-vessels.

It appears highly probable, therefore, that strong *vascular turgescence* of the encephalic mass, constitutes the primary pathological condition of apoplexy. This state often terminates almost immediately in sanguineous extravasation, or at a later period in serous effusion; and both these consequences constitute, of course, additional causes of cerebral compression.

To this view of the pathology of apoplexy, it has been objected, that cases sometimes occur in which the brain on dissection exhibits no traces whatever of vascular congestion, nor any other obvious lesions. Petzold has related instances of this kind, which he ascribes to *inanition of the cerebral vessels*, and in which not the slightest unnatural appearances were discovered on dissection, except an empty and collapsed state of the vessels of the brain. Such cases are, however, extremely uncommon; and do not, upon proper inquiry, militate against the doctrine advocated above. Upon this point Dr. Johnson observes, "that there is nothing more certain than that the vascular turgescence in the brain may so far subside, in the interval between death and dissection, as to leave no trace of its previous existence. This, in fact," he continues, "we consider to be the natural and true solution of the difficulty respecting the cause of apoplexy in those cases where the scalpel cannot detect deviations from the healthy structure." There is, however, another objection that has been urged against the doctrine of cerebral compression as the exclusive cause of apoplexy, which, though plausible, possesses no real weight. It is stated, and correctly, that all the external manifestations of strong apoplexy are sometimes the immediate result of excessive hæmorrhage. Dr. Denman has also related an instance of apoplectic symptoms supervening on very profuse hæmorrhage, and many more cases of this kind might be collected. In relation to such cases it is to be observed, that great losses of blood are peculiarly favorable to extraordinary determinations to the brain, or as Marshall Hall expresses it, "to increased action and fulness of the cerebral vessels." The experiments of Kellie, on animals show that serous effusion within the head, is a pretty constant concomitant or consequence of excessive sanguineous depletion; and the experiments of Dr. Seeds go to establish the same fact.

Out of forty-one dissections, Rochoux met with but five or six instances of extravasation in other parts of the brain : and the observations of Morgagni give nearly the same result. Extravasation of blood into the cerebellum is an extremely rare occurrence. According to Rochoux it hardly happens once in fifty cases ; and Morgagni reports only one instance of this kind. "Blood is rarely effused, *in the first instance*, into the ventricles. During ten years observation in the different hospitals, M. Bicheteau saw only two cases of this kind. The fluid is generally extravasated in the neighborhood of the ventricles, and bursts into them by a ragged opening." Occasionally blood has been found effused on the surface of the brain. Rochoux relates a case of this kind ; and Richter states that sometimes the brain, on removing the cranium, appears dark, brown, or blackish, through the membranes, from extravasated blood underneath. The old division of apoplexy into *sanguineous* and *serous*, possesses no importance in a practical point of view. I have already stated that the effused serum sometimes found within the head on dissection, is very probably not the immediate cause of the apoplectic seizure, but one of the results of the vascular engorgement, upon which the apoplexy depends. There are, nevertheless, some circumstances connected with this distinction which it may be proper to notice. Thus, it appears, from the observations of M. Serres, that when the apoplectic attack is complicated with hemiplegia, we may infer that there is extravasation of blood into the cerebral substance. When, on the other hand, the disease is accompanied with paralysis, we may presume that the substance of the brain remains uninjured, and that more or less serum, or sero-sanguineous fluid, is effused by the congested and irritated meninges upon the surface, or into the natural cavities of the brain. The former variety—that is the complicated or paralytic form of the disease—M. Serres calls *cerebral apoplexy*, from the cerebral mass itself being the principal seat of the morbid changes. The latter, or uncomplicated variety, he denominates *meningeal apoplexy*, on account of the manifest traces of vascular irritation and congestion, discovered by dissection, in the meninges. It appears from the observations made in the Parisian hospitals, that meningeal or serous apoplexy occurs chiefly before the fifteenth and after the sixtieth year of age ; and that females are more liable to this variety of the disease than males.

*Treatment.*—If then, the phenomena of this disease, rest upon the probability of pressure of the brain, the main object to be kept in view in the treatment is the equalization of the circulation and a removal of the consequent pressure. In the actual paroxysm of the malady, the patient should be placed in such a posture, as will favor a flow of blood from the head. Warmth and frictions should be applied to the lower limbs—such as hot bricks, bottles of hot water, fomentations ; flannels wrung out in a very strong preparation of vinegar and cayenne pepper and applied with considerable force in rubbing the feet, ankles and legs ; at the same time we should administer clysters in quick succession, certainly every ten or fifteen minutes, composed of one half tea-spoonful of composition, a tea-spoonful of cayenne pepper, two table spoonful of number six, and a tea cup full of luke warm water. As soon as the sufferer can be induced to swallow, composition and number six should be

freely given. Simultaneously to this remedial attention, active preparations should be made to administer the vapor bath to the legs and lower portion of the body. Repeated cold effusions in the mean time to the head and face. When the patient is sufficiently recovered a full course of medicine should be given; and it need scarcely be added that the subsequent, fundamental treatment will consist in courses of medicine, as the employment of means best calculated to lessen a determination of blood from the brain, and force it from the cerebral vessels.

The operation of cathartic medicine will also be found beneficial in their influence in diminishing the afflux of blood to the head, as their tendency is to excite a free secretion in the intestines.

The prompt and judicious employment of the foregoing means embraces every thing that may be deemed efficient in the remediate management of apoplexy. From whatever cause the disease may arise, our whole efforts should be directed to the removal of the inordinate vascular action, or turgescence within the head. Some modifications in the mode of the measures mentioned, according to the general constitutional habit, age, and character of the exciting causes, will of course be necessary.

During convalescence, light, unirritating diet only should be admissible.

Persons predisposed to apoplexy by physical or corporeal conformation should cautiously guard against all predisposing causes, and frequently take a course of medicine to diminish the liability to cephalic congestions.

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## PARALYSIS, OR PALSY.

PALSY is a diminution or total loss of the powers of motion and sensibility in certain parts of the body, often attended with drowsiness. In some instances the disease is confined to a particular part or set of muscles; but it more usually happens that one entire side of the body, from the head downwards, is affected, which is known by the name hemiplegia.

If the power of motion and sense of feeling in the half of the body, taken transversely, be impaired, the complaint is denominated paraplegia.

Palsy may arise in consequence of an attack of apoplexy; and like it may be occasioned by any thing that prevents the flow of the nervous power from the brain into the organs of motion; hence tumours, overdistension and effusion, distortions of the spine, and a thickening of the ligaments that connect the vertebrae together, often give rise to it. It may also be occasioned by translations of morbid matter to the head, by the suppression of usual evacuations, and by pressure made on the nerves by luxations, fractures, wounds, or other external injuries. The long continued application of sedatives will likewise produce palsy: as we find those whose occupations subject them to the constant handling of white-lead, and those who are much exposed to the poisonous fumes

of metals or minerals, are very apt to be attacked with it. Whatever tends to relax and enervate the system, may likewise prove an occasional cause of this disease: hence those who lead a sedentary or luxurious life; those who are guilty of frequent irregularities, or great debaucheries; those who are engaged in intense studies during the night, or labor under great distress of mind or anxiety, are very subject to this malady.

It has very properly been doubted by some writers whether palsy of the lower extremities alone, or of one single part, has so often its cause in the brain as it is said. The cause may, it is thought, also reside either in the nervous cord of the spine, or in the abdominal viscera, or in the affected limbs themselves. The spinal cord is certainly composed of a nervous mass, and has the same membranes as the brain; hence it may be affected by the same disease, such as inflammation, suppuration, induration, tumour, congestion or ossification of the blood-vessels; collection of any fluid, by irritation, weakness, or exhaustion of the nervous mass. The spinal cord may also be injured or compressed by the deviation of any of the vertebræ. It is to inflammation of a more chronic form in that part, that we impute those shaking palsies which are attended with pain.

All the varieties of palsy more generally appear in the aged and infirm than in the young and robust. The left side is more frequently affected than the right.

A decline of energy is often to be regarded as a commencement of palsy. In the premature diminution of the capacity of either bodily or mental exertions, there may be, in many cases, a well founded fear of ultimate paralysis, unless the tendency to it be in due time counteracted by the relinquishment of pernicious habits, and the administration of appropriate remedies.

Palsy usually comes on with a sudden and immediate loss of the motion and sensibility of the parts; but in a few instances it is preceded by a numbness, coldness, and paleness, and sometimes by slight convulsive twitches. When the head is much affected, the eye and mouth are drawn on one side, the memory and judgment are much impaired, and the speech is indistinct and incoherent. If the disease affects the extremities, and has been of long duration, it not only produces a loss of motion and sensibility, but likewise a considerable flaccidity and wasting away in the muscles of the parts affected.

It has been mentioned, that a curvature of the spine, owing to one or more of the vertebræ being displaced, sometimes induces paralytic affections of the lower extremities, from the pressure that they make upon the nerves of those parts; and that sometimes the disease appears to arise solely from the thickening of the ligaments that connect the vertebræ together, without any particular affection of the bones. When one of the vertebræ only is diseased, it is observed that the patient is more completely deprived of the power of his limbs than when two or more of them are displaced, owing, as Mr. Bell thinks, to the angle being more acute, and consequently the pressure on the medulla spinalis greater, when one bone only is thrown out of the range. This also accounts for the paralytic symptoms in some being less remarkable in the more ad-



vanced stages of the disease than they were at first; for although one bone only is displaced at first, yet one or both of the contiguous vertebrae almost constantly yield at last; and the difference arising from this is so great, that patients almost always linger and die in the course of a year or two, often in a less time, when one bone alone is deranged; while they live for a great length of time, frequently as long as if no such circumstance had occurred, when the curvature of the spine becomes more extended.

Paralytic affections from distortions occur in all ages; but more frequently about puberty than at any other period, and more commonly in girls than in boys. In general the effects that result from them are observed before the cause is suspected; for there is seldom much pain in the part immediately affected. When distortion of the spine occurs during infancy, the patient appears to be suddenly deprived of the use of his limbs; but at more advanced periods, he complains first of feebleness and languor, and of numbness or want of feeling in the lower extremities. By degrees this want of sensibility is found to increase, and he is often observed to stumble, and to drag his legs, instead of lifting them properly; nor can he stand erect for any length of time without much difficulty. At last he loses the use of his legs entirely, which become altogether paralytic; and when the spine is distorted much forward, so as to compress the thoracic and abdominal viscera, he becomes distressed with difficulty of breathing, or with complaints in the stomach and bowels, according to the part of the spine that is diseased.

Palsy is to be distinguished from apoplexy by the pulse; which in the former disease is soft and slow, by the loss of sense and motion being only partial, by the absence of stertor, and likewise by the other symptoms.

When palsy attacks any vital part, such as the brain, heart, or lungs, it soon terminates fatally. When it arises as a consequence of apoplexy, it generally proves very difficult to cure. Paralytic affections of the lower extremities, ensuing from any injury done to the spinal marrow, by blows and other accidents, usually prove incurable. Palsy, although a dangerous disease in every instance, particularly at an advanced period of life, is sometimes removed by the occurrence of the diarrhoea or fever. A feeling of warmth, and a slight pricking pain, as if stung by ants, in the parts affected, with returning sensation and motion, are favorable symptoms.

The morbid appearances to be observed on dissection in palsy are pretty similar to those which are to be met with in apoplexy: hence collections of blood, and of serous fluids, are often found effused on the brain, but more frequently the latter, and in some instances the substance of this organ seems to have suffered an alteration. In palsy, as well as in apoplexy, the collection of extravasated fluid is generally on the opposite side of the brain to that which is affected.

*Treatment.*—In most cases, and particularly where the disease has arisen in aged or decrepit persons, the external application of stimulants will be highly proper; wherefore the parts affected, as well as all along the spine, may be rubbed several times a-day with a flannel or a flesh-brush, impregnated with flour, or essence of mustard, or with the

palms of the hand, and some kind of rubefacient liniment, probably a strong alcoholic preparation of red pepper, and some of the essential oils, would be preferable. Warm bathing is a remedy which has been much employed in most cases of palsy, as an external stimulant. In all cases of palsy, whether one only, or several parts of the body are simultaneously affected, stimulants internally, as well as externally, should be used. Those that would be ranked in importance, in the first class, are compounded by the formula, known by the name of "Thomsonian spice bitters." These should be taken freely in a suitable quantity, every four hours. Artificial means should be resorted to, to imitate natural dejections; and it is important that this point should not be overlooked.

The most salutary treatment yet to be mentioned, it is thought, consists in the regular Thomsonian courses of medicine. The vapor bath, the sudorific power of the composition, and the lobelia emetics, conjoined, and acting simultaneously, produce that alteration or change in the system, so highly favorable to a restoration in this malady. Certainly the result of experiment places this mode of treatment in the most favorable estimation.

In palsy, the diet should be light, nutritive, and of a warm, aromatic nature. If the patient is able to walk, he should take such daily exercise as his strength will admit; but if deprived of the use of his legs, he ought then to be carried abroad in a carriage, or on horseback; and frictions with the strongest stimulants should be frequently applied to the parts affected. Flannels should be worn next to the skin, and all exposures to cold, damp, moist air, carefully avoided. The influence of a warmer climate is frequently resorted to with marked indications of improvement.

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## SYNCOPE, OR FAINTING.

THIS disease consists in a decreased action, and sometimes total cessation of the pulse and respiration. It is sometimes preceded by anxiety about the præcordia, a sense of fulness ascending from the stomach towards the head, vertigo, or confusion of ideas, dimness of sight, and coldness of the extremities. Attacks of syncope are frequently attended with, or end in vomiting, and sometimes in convulsions, or in an epileptic fit.

The causes of this affection are sudden and violent emotions of the mind, pungent and other kinds of odors, derangement of the primæ viæ, debility from preceding disorders, defect of the stimulus of distention, as after blood-letting, hæmorrhage, or the operation of tapping in dropsy; organic affection of the heart, or of the parts immediately connected with it, such as aneurism either of the heart itself, or of the arch of the aorta; ossification of the valves of the heart, or its large blood-vessels, or polypi.

*Treatment.*—The patient should be placed in a recumbent posture

during the paroxysm, the nostrils are to be stimulated with volatile salts, or spirits, and the face sprinkled with cold water, or No. 6 freely taken into the stomach.

If the disease arises as the consequence of debility or defective excitement, No. 6, or the spice bitters, should be freely advised. It hardly need be added, that avoiding the occasional causes, and removing them, if in our power, is a matter we should always keep in view.

## VERTIGO, OR GIDDINESS IN THE HEAD.

COMMON as this complaint is, I have not hitherto met with any satisfactory explanation of its cause. Sauvages, indeed has entered upon the subject pretty freely, as has Darwin since his time, and Crichton since the time of Darwin; while it has been investigated with much patience and ingenuity by Dr. Herz, of Berlin. For the most part, it has been ascribed to a morbid excitement, or increased action in the organ of vision, which is the view taken of it by Sauvages and Darwin, or to "a state of mental confusion arising from too rapid a succession of representations," which is the explanation of Herz and Crichton.

That there is, in all instances, some degree of mental confusion, may, perhaps, be allowed, and that there is often too rapid a succession of representations, with a morbid increase of sensorial action, may be allowed as readily: but if the following remarks be found entitled to attention, and succeed in delineating the real nature of vertigo, it will appear that the external senses are only indirectly, if at all, the seat of the morbid action; that this action is far more frequently in a state of diseased diminution than of diseased increase; and that even a rapid succession of representations is not essential to the sensation.

We have had frequent occasions of showing that the nervous power which supplies the muscular fibres is communicated, not, strictly speaking, in a continuous tenor, but in minute and successive jets, so that the course of this delicate fluid is alternately broken and renewed by a series of fine and imperceptible oscillations. In a state of health and vigor this succession of influx and pause is perfectly regular and uniform, and hence whatever movements result from it will partake of the same uniformity, and appear to be one continued line of action instead of a successive series. But as soon as ever the harmonious alternation through which the nervous power is thus supplied, is interfered with, the oscillations become manifest; the apparently uniform current is converted into a tremulous undulation, and the muscular exertion to which it gives rise, instead of being seemingly one and undivided, is sensibly multiplied into hundreds: of which any person may convince himself on observing a strong and healthy arm extended for a few minutes with a small weight at the end of the fingers, and an arm reduced in strength by a fever, or any previous labor; for while the first maintains an even

and uniform line, in the second this line is broken into perpetual tremors and undulations.

That the nervous power which supplies the muscular fibres is communicated in this way there is no doubt; and as it is highly probable that all the different kinds of nervous fibres are fed by a like process, there can be little doubt, also, that those which maintain an intercourse between the brain and the external senses, and even those which belong to the external senses themselves are supplied by the same kind of alternating pause and flow. And consequently that, as a perfect regularity and uniformity in this alternation is the means of conveying from the organ of vision to the sensorium one undivided perception of every single object presented to it, so, an irregularity and want of uniformity in the alternating series, must confuse and complicate the perceptions, and multiply them into as many as the series of jets themselves consist of, though each perception may, perhaps, be less distinct and perfect than the single perception conveyed in the ordinary course. Thus, in looking through a window, or an eye-glass, the objects that pass before us in regular order, pass singly and without confusion; but if this order be interrupted by movements we are not accustomed to, or the objects jerked about, as in a magic lantern, they make us dizzy with their motion, and we see them confusedly and in delusive numbers.

In this manner then it appears to me that the increased motion, and apparently rapid succession of representations is produced in the affection we call vertigo; which under this explanation is a clonic action of the nervous fibres subservient to perception, in the same manner as the rapid and tumultuous agitation of the muscles in tremor, shaking palsy, or epilepsy, are a clonic action of the fibres subservient to voluntary motion. In the last of these affections we find a considerable difference in the nature and intervals of the clonic movements; for these must depend upon the greater or less degree of interruption, which the nervous power sustains in its flow, or upon the peculiar relaxed or spastic state of the nervous fibres themselves, and probably, at times, upon some other cause of which we are totally ignorant. And we have, hence, reason to expect, and do in fact perceive, an equal diversity in the clonic and illusory motions of vertigo; for the objects or their representations presented to the perception appear sometimes to circumvolve horizontally from right to left, or perpendicularly from above downwards, or from below upwards, or to be very whimsically changed in their form. And not unfrequently the patient himself seems to be moving as well; and commonly in a contrary direction to the apparent motion of the objects.—And as the intermediate nerves between the other external senses and the brain seem occasionally to coincide in the same morbid agitation, we can easily conceive how that very common modification of the disease may be produced in which the dizziness is combined with illusory sounds, as of whispering or murmuring, the ringing of bells, or beating of drums, or even the roar of cannon: for, as single objects may, under the influence we are now contemplating, be prodigiously multiplied or magnified, so may single, and otherwise almost imperceptible sounds: and especially where the auditory nerve is itself in a state of high morbid acuteness, during which we have already had occasion to remark that the gen-



tlest and lightest tones, even the whisperings of a mere current of air in a room, or the breathing of persons present is intolerable, while sound before unperceived became highly distressing. And in like manner by an equal irregularity in the flow of the nervous fluids subservient to the perceptions of smell and taste, we may account for similar illusions upon these faculties.

In many instances, we find the vertigo equally present whether the patient be in the dark or light, whether the eyes be closed or open; and we have hence a full proof that it is not dependent, as Dr. Darwin conceives, upon an increased energy in the irritative motions of the organs of vision. In some cases the representations of objects are very numerous and rapid, but in others far less so, and particularly where the affection is severe from the first, or the patient is in a state of constitutional debility; under which circumstances we may conceive the pauses in the flow of the nervous fluid to be more irregular or of longer duration than they otherwise would be. In many cases, indeed, the only sensation is that of a buoyant undulation or swimming without any succession of representations whatever; affording us a proof that the rapid succession of representations described by Dr. Herz, is not more essential to vertigo than the increased energy of Dr. Darwin.

But as the disease advances, or, in other words, as the flow or secretion of the nervous fluid becomes still more interrupted, the representations are confused, indistinct, and rapid in succession, often conjoined with a sense of dimness or darkness, existing equally whether the eyes be shut or open, forming a state by Hippocrates and the Greek writers generally called *scotoma* or *scotodinus*: and as the disease makes a further progress by a further interruption in the flow of the sensorial fluid, every power of body and mind augments in languor, till at length sensation both external and internal fails altogether, the action of the heart, and the other involuntary organs is enfeebled, and the patient swoons away, or sinks into a fainting fit, constituting the morbid condition we shall have to describe under the next genus.

The great predisponent cause in all these cases, whether of muscular agitation or of vertigo, is nervous debility or exhaustion: the exciting causes are whatever has a tendency to disturb the uniformity with which the nervous power is supplied through the whole of its fibres, and from one fibre to another. And hence those persons are most subject to both kinds of affection whose nervous system is constitutionally weak and mobile, or has become debilitated by disease or accident. Hence dyspeptic patients are peculiarly subject to both these affections; as are those who are faint from sudden and violent evacuations, want of food, or a long course of labor. Hence we meet with it as a frequent and distressing attendant upon those who have too freely indulged in the pleasures of the table, in those of sexual intercourse, and particularly the gross gratification of self-pollution. And, hence, we may see why it is so often an accompaniment of cephalæa, as the nervous fibres subservient to the organs of perception are here influenced from contiguous, in some cases from continuous sympathy.

The exciting causes we have stated to be whatever has a tendency to disturb the uniformity with which the nervous power is supplied through

the whole line of its fibres. Of these the chief are motion or exertion to which the strength is not equal, motion to which the system has not been accustomed, or hurried motion whether external or internal.

In a state of great weakness, whether from hunger, hard labor, hæmorrhage, or a protracted fever, even the ordinary motion of gentle walking is more than the little remaining strength can support: and the man who tries it trembles in every limb and becomes immediately vertiginous. In like manner whatever be his degree of strength he will feel vertiginous by exchanging the motion to which he has been uniformly accustomed for one of a different kind, and which he has seldom or never engaged in; and hence, the reason of the vertigo that accompanies swinging, sailing in a ship, walking in a circle, sitting backward in a carriage, or standing on one's head; for the uniformity of the external habit has by length of time associated itself with the uniform flow or secretion of the sensorial fluid, and the one cannot be interfered with without interfering with the other. And that this is the cause of the dizziness hereby produced is obvious, since as soon as the old habit is overpowered by a new one, or, in other words, as soon as the man has accustomed himself to the new action, it may be persevered in without any vertiginous sensation whatever. In some persons this sympathy of association is not so strong as in others, and hence, they are not so soon affected: in infants and young children such a kind of sympathy has rarely commenced, for while their age has not given time for it, they have had so little walking in a straight line, and been accustomed to so much swinging and tossing about in the arms, in every direction, that they are equally prepared for all; and hence can run round a circle, or even circumsolve on their feet, without any feeling of giddiness whatever.

For the same reason hurried, tumultuous, or confused, motion of any kind, whether external or internal, has a tendency to produce the same effect; for the current of the nervous supply will partake of the agitation, and dizziness be a necessary result. Hence the vertigo that accompanies intoxication, in which, from the inordinate excitement that prevails throughout the system, the regular and uniform stream of the sensorial fluid is quickened into a confused and disorderly rush. And hence the same effect from congestion, or compression of any kind, as also from a sudden influence of mental emotion, and particularly of the depressing passions: though in such cases, the uniformity of the sensorial stream is interfered with by a check, instead of by a rapidity of action: and where the check is considerable, as in cases of sudden fright or apprehension, a fainting fit is at once produced without the preceding stages.

It is to this cause, exercised indeed in a less degree, that we are to ascribe the dizziness which is felt on looking down a precipice, climbing a tall ladder, or walking over a very narrow bridge, with a roaring torrent below; for in all these cases we are conscious of danger, and lose our firmness in our fear. And that such is the real cause is quite obvious from the fact that those who possess their firmness, and have no apprehension or trembling whatever, have no dizziness: and that we ourselves are able to endure an exposure to the same scenes and the same motion with as great a freedom from it, when habit has given us calm-

ness, and we have no longer any apprehension. So the sleep-walker has been known to tread firmly and fearlessly over planks and precipices the sight of which has whirled all his brains when awake.

*Treatment.*—Vertigo is not generally an alarming affection—and is only to be remedied by a particular attention to its cause—and especially the predisposition to a relapse. If we have reason to suspect congestion or too great a determination of blood to the head, or if the stomach has been surfeited—the most speedy and effectual relief will be a *Lobelia emetic*. But where the cause on the contrary, is debility or exhaustion, it is best relieved by cordials and a generous diet; and where it is an idiopathic affection of the nervous system, the warm antispasmodics and tonics—such as the aromatic or spice bitters and number six will bid fairest to succeed. During the paroxysms, perfect rest and a reclined position will always be found essential—and where there is a tendency to fainting, the number six should always be at hand.

## DYSPEPSIA, OR INDIGESTION.

This disease chiefly arises in persons between thirty and forty years of age, and is principally to be met with in those who devote much time to study, or who lead either a very sedentary or irregular life. A great singularity attendant on it is, that it may, and often does, continue a great length of time, without any aggravation or remission of the symptoms. The disease is a frequent attendant on chronic weakness.

In Dr. Parry's opinion, idiopathic dyspepsia consists in a morbid fulness of the vessels of the villous coat of the stomach.

Great grief and uneasiness of mind, intense study, indolence, profuse evacuations, excess in venery, hard drinking, particularly of spirituous liquors, irregularity of life, too frequent a use of warm diluent liquors, and of tea, tobacco, opium, and other narcotics, immoderate repletion and over-distention of the stomach, very frequent rejection of the saliva, in consequence of smoking or chewing tobacco, or a diminution or interruption of the due secretion of it, a deficiency in the secretion of the bile, pancreatic or gastric juice, diseases of the liver and spleen, hysteria, hypochondriasis, and exposure to moist and cold air, when without exercise, are the causes which usually occasion dyspepsia. Every thing which diminishes the amount of nervous influence transmitted to the stomach, weakens the digestive action.

Unless where dyspepsia arises from slight inflammation and thickening of the coats of the stomach, and then exists as a primary disease, it is almost universally symptomatic of organic affection of the liver or spleen, and not an idiopathic disease; of which the practitioner may be convinced by paying due attention to the color of the alvine and renal discharges, to the pasty or doughy feel of the skin, and the dingy pale hepatic hue of the countenance, that generally attend dyspepsia.

Scirrhus in the pyloric orifice, or outlet of the stomach, is very apt to take place in those who addict themselves to ardent spirits; and there are numerous glands at this part which, from such a practice, are liable to be affected, giving rise to a high degree of acidity in the stomach. Many, perhaps most of the diseases of the digestive organs, caused by various circumstances, consist in a weakness or atony of the affected parts, accompanied by a deficiency or depravity of the fluids secreted by them, and upon the healthy qualities of which a right performance of the functions depends.

The state of the tongue is in general a pretty good criterion of a disordered state of the stomach, but it does not point out the kind and degree of that disorder. With a furred tongue, there is perceived a disagreeable taste in the morning, and the breath in many instances, notwithstanding the greatest care that can be taken, acquires an offensive smell. In consequence of continued disease, the cuticle of the tongue sometimes appears to have lost its usual color, and to become permanently white.

In some states of depraved digestion, there is nearly a complete disrelish for food; but still the appetite is not greatly impaired, as at the stated periods of the patient's meals he can eat heartily, although without much gratification. With hard drinkers nausea and vomiting frequently occur in the morning; and in ruined constitutions there is an almost constant thirst, with feverishness, loss of appetite and strength, shortness of breath, paleness of the countenance, languor, and towards the close, anasarca swellings.

In stomach complaints, in addition to defective appetite, indigestion, flatulency in a high degree, acidity and cardiagia, the patient is often afflicted with costiveness, vertigo, pain in the balls of the eyes, imperfect vision, ringing in the ears, and palpitations. The mind in such cases is frequently irritable and desponding, and great anxiety is observable in the countenance. The pulse is usually feeble and frequent, and slight exercise produces considerable fatigue and perspiration. Restlessness prevails at night, the sleep is disturbed by frightful dreams and startings, not affording much refreshment, and occasionally there is much moaning, with a sense of a heavy weight on the chest, or what has been denominated the night-mare. In some instances, the disease is complicated with severe pain in the stomach itself, and now and then with pyrosis.

Although dyspeptic complaints, when they exist in consequence of debility of the stomach, may be alleviated, or be entirely removed by timely desisting from bad habits and taking proper medicines, still when they have been of long continuance, so as to produce great debility, and pass into some other disease, such as dropsy; or when they originate from an organic affection, such for instance as a scirrhus of the pylorus, or ulceration of the coats of the stomach, they will be sure to prove fatal.

The morbid appearances to be observed on dissections of this disease, are principally confined to the liver, spleen, and that part of the stomach which is called the pylorus, this being often found either in a contracted, scirrhus, or ulcerated state. In every instance the stomach



is perceived to be considerably distended with air, and occasionally its interior surface is beset with tubercles, or partially eroded.

In the case of habitual drunkards and hard drinkers, the coats of this viscus are often found thickened and indurated, and its interior surface beset with small processes of a fungous appearance; the liver in general is much enlarged, and studded with tubercles, the spleen usually somewhat diminished in size, and the gall-bladder pale and nearly empty.

*Treatment.*—In the treatment of dyspepsia, three indications must be attended to:

The first is to avoid or remove the remote causes which have been enumerated. A knowledge of the cause which has given rise to it, will point out the best means of relief.

The second is to obviate the symptoms which contribute to continue or aggravate the disease.

The third is to restore the tone of the organ, if possible.

To effect the first of these intentions, it must be the business of the physician to point out to the patient the indispensable necessity of renouncing such habits or pursuits as may have tended to give rise to the disease, as the continued application or frequent repetition of these causes may defeat the use of whatever remedies are employed.

If he leads a fashionable life, it will be necessary for him to forsake the haunts and habits of dissipation; to leave the crowded city, and its alluring amusements, conducted in rooms, where the air he breaths is vitiated and contaminated by the great number of persons collected together; to shun luxurious tables, indolence, and late hours; to retrace the footsteps by which he had deviated from simple nature, and to court the country, pure air, moderate exercise, early rising, simple diet, the society of a few select friends, and pleasing occupations.

To accomplish the second intention of obviating the symptoms which contribute to continue or aggravate the disease, it will be necessary to remove the crudities in the stomach, by giving from time to time, as circumstances may indicate, lobelia emetics, or full courses of medicine. It will also be necessary to correct the morbid acidity in that organ by alkalies and absorbents, as the subcarbonate of potash, magnesia, chalk, &c., to assuage the pain and flatulency in the stomach and intestines, by giving freely the spice bitters, to which should be added a liberal quantity of nerve powder; and, lastly, to obviate costiveness by the daily use of the syringe, (in which should be used a tea-spoonful of composition, and a tea-cup of tepid water;) or if this *will* not be resorted to, such gentle laxatives joined with aromatics, as will promote a ready discharge of the contents of the intestines, without hurrying their action or increasing their excretions. Perhaps as good a formula as any, to answer this indication, is the following: black root and bitter root, (equal parts) four parts, capsicum one part, to which may be added a suitable quantity of cloves and mace; half a tea-spoonful of the powder to be taken in cold water every four or six hours.

An habitual attention to the removal of costiveness by instituting a regular custom of periodically soliciting an evacuation by voluntary and persevering efforts, will powerfully aid the beneficial effects of the other

means we employ. The morning is the proper time for the attempt ; and the trial should be prosecuted during at least fifteen minutes, if the peristaltic be not earlier excited to adequate motion. Perhaps a week may be unavailingly employed in this endeavor, but the proposed effect will probably be attained within a month : one month has indeed in numerous instances fully established an habitual call to intestinal evacuation, under circumstances that previously required the almost daily use of aperient medicines.

To accomplish the third intention of restoring the tone of the stomach, the loss of which is to be considered the chief and immediate cause of dyspepsia, we are to employ such medicines as act directly upon this organ, and such remedies and other auxiliary means as have a tendency to strengthen the the system in general.

The medicines best calculated to accomplish this object, are the spice bitters, to which should be conjoined slippery elm, and astringent tonics ; and when there is much debility, and weakness of the assimilating organs, irregular digestion, flatulent distention of the abdomen, much anxiety, difficult respiration from sympathy with the stomach, and occasional vomiting of viscid mucous ; frequent light lobelia emetics, added to the above mentioned treatment, will be eminently serviceable.

As it sometimes happens, that a diminution of the gastric juice is the cause of dyspepsia, the treatment above advised cannot fail to hold out the greatest hope of relief. To strengthen the system, whereby the powers of the stomach will be made stronger, the patient should take daily exercise on horseback, which will be preferable to walking, as being less fatiguing ; he should breathe pure, dry, and temperate air ; rise and retire at regular hours ; lead a temperate life, and adapt his dress to the changes and temperature of the climate.

It may be proper to remark, also, that the frequent vapor bath, and the flesh-brush, will furnish subsidiary aid in the progress of a permanent cure.

The diet in this complaint ought to be nutritive and generous, avoiding a repetition of that which is proved by experience injurious.

## HYPOCHONDRIASIS, OR HYPOCHONDRIAC AFFECTION.

This disease, known likewise by the name of low spirits, or the vapors, is a certain state of the mind along with dyspepsia, wherein the greatest evils are apprehended upon the slightest grounds, and the worst consequences imagined from any unusual feeling even of a trifling kind ; and in respect to such apprehensions and feelings, there is always the most obstinate belief and persuasion.

Hypochondriasis bears a strong resemblance to dyspepsia ; but there is this difference between them, that the former prevails at an advanced period of life, and is more an affection of the mind than of the body ; whereas the latter occurs principally from the age of puberty to that of

thirty-five, and depends chiefly on debility induced by various causes. Hypochondriasis may, moreover, be distinguished from dyspepsia by the languor, listlessness, want of resolution and activity, fear of death, and suspicious disposition being always present, and by the dyspeptic symptoms being often absent, or when present, they are in a much slighter degree.

Men of a melancholic temperament, whose minds are capable of great attention, and whose passions are not easily moved, are at an advanced period of life most liable to be attacked with this disease; and when it has once taken place, it goes on increasing as life advances, being usually most troublesome in the autumnal and winter seasons: which accounts for more acts of suicide being committed at these times of the year than any other.

The English have been accused as the nation of all others which is addicted to suicide; and perhaps this proneness ought more reasonably to be attributed to an indulgence in unhappiness and domestication of misery, from trivial circumstances, than to the influence of fogs, or the physical effects of coal fires, as have been assigned by foreigners.

Hypochondriasis seems to depend on a loss of energy in the brain, or on a torpid state of the nervous system, induced by various remote causes, such as close and intense study, long and serious attention to abstruse subjects, the constant remembrance of some material loss or disappointment which has occurred, great anxiety of mind, leading an inactive, indolent, or sedentary life, immoderate venery, or a use of crude, flatulent, or unwholesome food, being guilty of great irregularity and intemperance, and by a long continued evacuations.

The affections of the abdominal viscera with which this disease is usually complicated, have been often treated as standing in the relation of causes, while, in reality, they should be arranged among its occasional symptoms. That such is really the case, is clearly proved by a consideration of the exciting causes of the disease, which operate upon the system through the medium of the brain. These are the depressing passions, fear, grief, and despondency, habits of indolence quickly succeeding to a life of industry and employment, long continued and excessive exertions of the intellectual faculties. The sympathetic derangements consequent on hypochondriasis, are not, however, confined to the abdominal viscera; for nothing is more common than to meet, in such cases, with palpitations of the heart, difficulty of respiration, and chronic cough.

Hypochondriasis and other nervous complaints are, through the medium of sympathy, scarcely less infectious (it is probable) than febrile diseases; and even persons naturally of a cheerful temper, by being long domesticated with those of a melancholy desponding cast, have been known to become decidedly and often deplorably dejected.

The hypochondriac affection is attended with inactivity, a want of resolution with respect to all undertakings, lowness and dejection of spirits, great despondency, and apprehension of evil upon the slightest grounds, and a dread of danger from any unusual feeling even of a trifling kind, together with flatulency in the stomach and bowels, acrid eructations, costiveness, a copious discharge of pale urine, spasmodic

pains in the head and other parts of the body, giddiness, dimness of sight, and palpitations. In short, it is attended with such a long train of symptoms, that it would fill many pages to enumerate them all, as there is no function or part of the body that does not suffer in its turn by its tyranny; the miserable patient indulges wild imaginations, and fancies that he labors under almost every disease; and with respect to these feelings and apprehensions, he entertains the most obstinate belief, being highly displeased if any attempt is made to reason with him on the absurdity of his persuasions.

There are few examples of hypochondriacal people who find themselves worse at night than in the morning: the generality of them, like most of those who are afflicted with any of the complaints styled nervous, are seemingly hurt by their sleep, little as it is; and the longer they happen to sleep the worse they are: they awake out of it with confusion, and do not come immediately to themselves; and when they do, they can think only of melancholy subjects, and feel the worst horrors of their disorder. This state continues till dinner, with very little abatement; after dinner they feel themselves a little revived; and at night the tide of their spirits returns, which being desirous to enjoy, and dreading their certain ebb when they lie down, they go late and with reluctance to bed.

In hysterical women the operations of the animal powers seem to be the most disturbed and perverted; but in men the mind is most affected; involuntary exclamations, faintings and convulsions of all sorts, being most common in women, and silent despair in men. Hence, perhaps, suicide occurs more frequently with men than among women.

As to the prognostic, the disease, if recent, is rather to be regarded as troublesome than dangerous; but if long continued, it is apt to produce scirrhi of the viscera, cachexy, dropsy, incurable melancholy, or madness.

On dissections of hypochondriacal persons, some of the abdominal viscera (particularly the liver and spleen,) are usually found considerably enlarged. In some few instances, effusion and a turgescence in the vessels, have been observed in the brain.

The indications of cure in this disease seem to be,

1st, To excite the nervous energy which has been depressed, and that particularly by attending to the state of the mind.

2dly, To remove or alleviate the symptoms which serve to continue and aggravate the disease.

3dly, To strengthen the alimentary canal and promote the secretions.

To answer the first of these indications, the patient's attention is to be engaged and diverted to other objects than his own feelings; he is to be directed to vary the scene frequently by going from one place to another; to associate as much as possible with agreeable cheerful company; to engage in such pursuits as will afford him moderate exercise in the open air, which gardening, riding on horseback, and field sports, as hunting and shooting, are particularly calculated to do; and by all means to avoid absolute idleness; but in doing this, all application to former studies, especially professional ones, is to be forbidden: entertaining books will, however, be serviceable, as assisting to divert the mind from



itself. Gardening is a pursuit highly proper for hypochondriacs, as it will keep the mind alert and the body in exercise : such as live in the country should therefore engage in it. In cities or large town where this healthy recreation cannot be enjoyed, no better substitute can be employed than that of fitting up an apartment as a work-shop. Working in a cool and free atmosphere would prove a deliverance from that chilliness which for above half of our year so miserably persecutes the tender, and it might act equally as a charm on the ruffled spirits.

Hypochondriasis is far from being a metropolitan disease, as the multiplicity of external objects, which in a large capital are continually giving a new direction to the current of thought, is of course unfavorable to the uniformity and self-absorption of the melancholy. A residence, therefore, even in a large city, which affords objects of interest and motives of exertions, ought to be recommended to hypochondriacal or nervous patients, in preference to the most healthy situation in the country, where there is not enough to rouse the sluggishness or fill the vacuity of the mind.

Compassion, and not raillery, is to be bestowed on the hypochondriac, as the firm persuasion which he entertains will not allow his feelings to be treated as imaginary, nor his apprehension of danger to be considered as groundless, however the physician may be of opinion that it is the case in both respects. To gain his confidence, it will be necessary to attend to his complaints, as if they were all real : and to satisfy him, it will by all means be advisable to give him some kind of innocent medicine, changing it from time to time whenever he expresses any disappointment of relief.

In the absence of every other diversion, even the swallowing of medicine may be a source of amusement. The times for taking the different draughts, or doses, are so many epochs in the chronology of a hypochondriac, which by dividing, help to conquer the tedium of his day. However sceptical a physician may be with regard to the inherent or permanent qualities of any medicine, it is his duty, perhaps, to take advantage of the tide of opinion ; and he may honestly make use of his patient's credulity, in order to relieve him from the pressure of his disease, and render the partial weakness of his mind instrumental to the general restoration of his corporeal strength.

The complaints of hypochondriacs should be treated by the physician as of real existence ; and from whatever cause they may arise, it is his province to employ his art to subdue it ; nor to ruffle an irritable mind by unseasonable levity, or expose a morbid sensibility to insult and reproach.

From the slow evacuations of the stomach in melancholic temperaments, acidity often prevails in a high degree with hypochondriacs ; to obviate which, and answer the second indication of cure, it will be necessary for the patient to make use of absorbents and alkalies, as advised under the head of *Dyspepsia*.

Costiveness, which is another frequent symptom in hypochondriasis, is to be obviated by instituting a regular custom of periodically soliciting an evacuation by voluntary and persevering efforts once or twice a day at certain hours : and until the desired intention can be established

in this way, some gentle laxative may be taken occasionally, as mentioned under the head of *Dyspepsia*.

Nervous people are apt to be troubled with what are termed *muscæ volitantes* (atoms flying before the eyes,) which, though harmless and slight, often excite alarm and apprehension on the part of such patients, and may be mistaken for amaurosis, or incipient cataract: but whenever the appearance of *muscæ volitantes* is unaccompanied with the sensation of a mist which more or less obscures the appearance of objects, we may safely conclude that it is not a symptom of cataract; and whenever this appearance is not accompanied with a fixed state of the pupil, it may be safely inferred that it is not a symptom of *gutta serena*.

The use of a warm bath is generally resorted to with decided advantage by hypochondriac patients as a remedy for wakefulness, or broken and untr tranquil sleep, even when they had previously tried all the medicinal and dietetic opiates, as well as other methods for producing the same effect, without obtaining the object of their wishes.

Frictions of the whole body every morning and evening for ten minutes or longer, with coarse flannel cloths, will be likely to prove beneficial; and so will be also bodily exercise. For the cure as well as prevention of hypochondriasis, and other nervous affections, there is no means better adapted than bodily exercise in the open air; and a man suffering under a fit of the vapors will often find that by riding or walking, particularly in agreeable company, he will be able to remove it. The load upon his mind may be exonerated and removed by the continued agitation of his body.

Walking, no doubt, is best adapted to a state of unimpaired health or vigor; but for the feeble and hypochondriacal, or those who are affected by any visceral obstruction or disease, riding on horseback is for the most part preferable to any other kind of exercise. Instances not unfrequently occur of persons with broken spirits and apparently ruined constitutions, in whom an unexpected restoration to strength and cheerfulness has been effected by regular and daily horse exercise, when almost every other method of recovery has been tried without any sensible advantage. Nearly to live on horseback will be a good prescription for all nervous as well as bilious patients.

A person often indolently bends under the burden of hypochondriacal indisposition, which a spirited effort would at first have removed; and on this account I would strongly recommend that those who are laboring under this distressing evil should be stimulated to gradual exertion of all their faculties, both bodily and mental.

The diet in hypochondriasis should consist of what is light, generous, and nutritive, avoiding what is apt to prove either acescent or flatulent; and, therefore, animal food will be the most proper. The stomach ought never to be overloaded; neither should it be suffered to remain perfectly empty. If a faintness is perceived at any time between meals, a bit of cake or biscuit may be taken with a glass of wine.

The use of the vapor bath will be found decidedly serviceable to the hypochondriac as a remedy for wakefulness, or broken and untr tranquil sleep, and should never be omitted just before going to bed. When the patient comes out of the bath, the rough towel should be freely ap-

plied to the surface, for at least ten minutes. This course often proves efficacious in procuring sleep when medical and diatetic anodynes fail to obtain the object of their wishes. The tonic bitters may be advised, with an occasional emetic or course of medicine, particularly where there is a loss of the powers of the stomach.

If any embarrassment of the liver should co-exist, the courses of medicine should be more frequently repeated; and a pill compounded by the following recipe is also highly recommended. The extract of the dandelion three parts, seeds of lobelia, capsicum, golden seal, bitter root, each one part, made into a common sized pill; two to be taken three times a day.

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## HYSTERIA, OR THE HYSTERIC DISEASES.

THIS complaint appears under such various shapes, imitates so many other diseases, and is attended with such a variety of symptoms which denote the animal and vital functions to be considerably disordered, that it is difficult to give a just character or definition of it; and it is only by taking an assemblage of all its appearances that we can convey a proper idea of it to others.

The disease attacks in paroxysms or fits. These are sometimes preceded by dejection of spirits, anxiety of mind, effusion of tears, difficulty of breathing, sickness at the stomach and palpitations at the heart; but it more usually happens that a pain is felt on the left side, about the flexure of the colon, with a sense of distension, advancing upwards till it gets into the stomach; and removing from thence into the throat, it occasions by its pressure a sensation as if a ball was lodged there, which by authors has been called hysteric ball. The disease having arrived at this height, the patient appears to be threatened with suffocation, becomes faint and is affected with stupor and insensibility; while at the same time the trunk of the body is turned to and fro, the limbs are variously agitated, wild and irregular actions take place in the alternate fits of laughter, crying, and screaming; incoherent expressions are uttered, a temporary delirium prevails, and a frothy saliva is discharged from the mouth. The spasms at length abating, a quantity of wind is evacuated upwards, with frequent sighing and sobbing, and the woman recovers the exercise of sense and motion without any recollection of what has taken place during the fit; feeling, however, a severe pain in her head, and a soreness over her whole body.

In some cases there is little or no convulsive movement, and the person lies for some time seemingly in a state of profound sleep, without either sense or motion.

Hiccough is a symptom which likewise attends in some instances on the hysteric disease; and now and then it happens that a fit of hysteria consists of this alone. In some cases of this nature it has been known to continue for two or three days; during which it frequently seems as

if it would suffocate the patient, and proceeds gradually weakening her, till it either goes off, or else occasions death by suffocation : but this last is extremely rare. Besides hiccough, other slight spasmodic affections sometimes wholly form a fit of hysteria, which perhaps continue for a day or two, and then either go off themselves, or are removed by the aid of medicine.

In some cases the patient is attacked with violent pains in the back, which extend from the spine to the sternum, and at length become fixed upon the region of the stomach, being evidently of a spasmodic nature, and often prevailing in so high a degree as to cause clammy sweats, a pale cadaverous look, coldness of the extremities, and a pulse hardly perceptible.

Hysteria affections occur more frequently in the single state of life than in the married, and most usually between the age of puberty and that of thirty-five years ; and they make their attack oftener about the period of menstruation than at any other.

They are readily excited in those who are subject to them by passions of the mind, and by every considerable emotion, especially when brought on by surprise : hence sudden joy, grief, fear, &c., are apt to occasion them. They have also been known to arise from imitation and sympathy.

Women of a delicate habit, and whose nervous system is extremely sensible, are those who are most subject to hysterical affections ; and the habit which predisposes to their attacks is acquired by inactivity and a sedentary life, grief, anxiety of mind, late hours, dissipation, a suppression or obstruction of the menstrual flux, excessive evacuations, and the constant use of a low diet, or of crude unwholesome food. The disease is sometimes met with in the more delicate of the male sex.

Hysteria differs from hypochondriasis in the following particulars, and by paying attention to them we may always readily distinguish between them. Hysteria attacks the sanguine and plethoric ; comes on soon after the age of puberty ; makes its onset suddenly and violently, so as to deprive the patient of all sense and voluntary motion ; is accompanied with the sensation of a ball rising upwards in the throat, so as to threaten suffocation ; is attended usually with much spasmodic affection ; is more apt to terminate in epilepsy than in any other disease ; and on dissection its morbid appearances are confined principally to the uterus and ovaria.

The reverse happens in hypochondriasis. It attacks the melancholic ; seldom occurs till after the age of thirty-five ; comes on gradually ; is a tedious disease, and difficult to cure ; exerts its pernicious effects on the membranous canal of the intestines, as well by spasms as wind ; is more apt to terminate in melancholy or a low fever than in any other disease : and on dissection exhibits its morbid effects principally on the liver, spleen, and pancreas, which are often found in a hard, scirrhus, or other diseased state.

Another very material difference might be pointed out between these two diseases, which is, that hysteria is much relieved by advancing in age, whereas hypochondriasis usually becomes aggravated.

The two diseases have often been confounded together ; but, from



duly considering the foregoing circumstances, it appears that a proper line of distinction should be drawn between them.

The hysteric passion likewise differs from syncope, as in this there is an entire cessation of the pulse, a contracted face, and a ghastly countenance; whereas in the uterine disorder there is often something of a color, and the face is more expanded; there is likewise a pulse, though languid; and this state may continue two or three days, which never happens in syncope.

It also differs from apoplexy, in which the abolition of sense and voluntary motion is attended with a sort of snoring, great difficulty of breathing, and a quick pulse; which do not take place in hysteric cases.

It differs from epilepsy, in that this is supposed to arise in consequence of a distension of the vessels of the brain; whereas in hysteria, the spasmodic and convulsive motions arise from a turgescence of blood in the uterus, or in other parts of the genital system. Hysteria may be distinguished from epilepsy by the hysteric ball, by the great flow of limpid urine, by the sudden transitions from laughing to crying, and by the fear of death preceding and succeeding to the paroxysm.

However dreadful and alarming an hysteric fit may appear, still it is seldom accompanied with danger; and the disease never terminates fatally, unless it changes into epilepsy or mania, or the patient is in a very weak reduced state.

In the cure of hysteria two indications are to be attended to.

The first is to allay the spasmodic symptoms which constitute the fit; and

The second, to lessen the excitability of the nervous system, and strengthen the whole frame during the intermissions of the paroxysms.

The first of these indications is to be answered by an immediate lobelia emetic. The patient should be put in bed, warm bricks applied to the feet, composition freely given, followed by lobelia as soon as possible, and large doses should be repeated every ten or fifteen minutes until relief is obtained. Clysters composed of composition and No. 6, should be repeated also, where there exists torpidity of the bowels. This course will but seldom fail to arouse the patient from a paroxysm.

The second indication is to be attained during the intermissions of the exacerbations of excitement, by frequent light courses of medicine, which will lessen the irritability and excitability of the system by removing obstructions, and equalizing circulation, and they should invariably be followed by the bitter tonics: probably those recommended under the head of female bitters, (in second vol.,) would secure the greatest amount of good. The vapor bath at night, and friction with a piece of flannel, or rough towel, will have a tendency to promote quietude during the night and keep up an action upon the surface so manifestly essential. During the operation of the bath the feet should be immersed in warm water.

## EPILEPSY, OR FALLING SICKNESS.

THIS disease consists in a sudden deprivation of the senses, accompanied with a violent convulsive motion of the whole body.

It attacks by fits, which after a certain duration go off, leaving the person most commonly in his usual state : but sometimes a considerable degree of stupor and weakness remains behind, particularly where the disease has frequent recurrences. It is oftener met with among children than grown persons, and boys seem more subject to its attacks than girls. Its returns are periodical, and its paroxysms commence more frequently in the night than in the day, being somewhat connected with sleep. It is a disease sometimes counterfeited, in order to extort charity or excite commiseration.

The only disease with which epilepsy can be confounded, is hysteria, and from this it may readily be distinguished, by the foaming at the mouth, gnashing of the teeth, blackness of the countenance, &c., together with the speedy termination of the fit in sleep, and the absence of the usual symptoms of hysteria, such as the globus hystericus, palpitations of the heart, involuntary laughing or weeping, and other symptoms usually described in the histories of that disease.

Occasionally we meet with epilepsy in combination with mania.

Epilepsy is properly distinguished into sympathic and idiopathic ; being considered as sympathic, when produced by an affection in some other part of the body, such as acidities in the stomach, worms, teething, &c. ; and idiopathic, when it is a primary disease, neither dependent on, nor proceeding from any other.

The causes which give rise to epilepsy are blows, wounds, fractures, and other injuries done to the head by external violence, together with plethora of the vessels of the head, lodgments of water in the brain, tumors, concretions, polypi, and a deformity in the shape of the bones in any interior part of the skull. Epilepsy has also been known to arise from an affection of the spinal marrow ; and it is to inflammation in that part, of a more chronic form, that those shaking palsies, which are attended with pain, have been imputed. Violent affections of the nervous system, sudden frights, fits of passion, great emotions of the mind, frequent intoxications, acute pains in any part, worms in the stomach or intestines, teething, the suppression of some long accustomed evacuation, too great emptiness or repletion, and poisons received into the body, are causes which likewise produce epilepsy. Sometimes it is hereditary, and at others it depends on a predisposition arising from a mobility of the sensorium, which is occasioned either by plethora or a state of debility.

We are told by Dr. Parry, that whatever may be the primary cause of epilepsy, it usually depends immediately on excessive impetus of blood in the vessels of the brain.

An attack of epilepsy is now and then preceded by a heavy pain in the head, dimness of sight, noise in the ears, palpitations, flatulency in the stomach and intestines, weariness, and a small degree of stupor, and in a few cases there prevails a sense of something like a cold vapor rising up to the head ; but it more generally happens, that the patient falls

down suddenly without much previous notice; his eyes are distorted or inverted, so as that only the whites of them can be seen; his fingers are closely clenched; his limbs and the trunk of his body, particularly on one side, are much agitated; he foams at the mouth, and thrusts out the tongue, which often suffers great injury from the muscles of the lower jaw being also affected; he loses all sense of feeling, and not infrequently voids both urine and feces involuntarily.

After a continuance of the convulsions for some time, they abate gradually, and the patient continues for a short period in a state of insensibility, but on coming to himself, feels very languid and exhausted, and retains not the smallest recollection of what has passed during the fit.

When the disease proceeds either from tumours, polypi, concretion, or a deformity in the bones of the skull, the case is hopeless. When it arises from an hereditary predisposition, or comes on after the age of puberty, or where the fits recur frequently and have become habitual, or are of long duration, it will be very difficult to effect a cure; but when it attacks at an early age, and is occasioned by worms or any accidental cause, it may in general be removed. In some cases it has been entirely carried off by the recurrence of a fever, or by the appearance of the menses, or of a cutaneous eruption. It has been known to terminate in apoplexy, and in some instances to produce mental derangement, or a loss of the powers of the mind, and so to end in idiotism.

Epilepsy has been perceived to disappear suddenly about the age of puberty where it has attacked children of five or six years old, and where no treatment has had any effect. The number of fits are always increased by parturition, and by every other thing which has a tendency to debilitate the system.

The appearances usually to be observed on dissection are, serous and sanguineous effusion, a turgid tense state of the vessels of the brain without any effusion, a dilation of some particular part of the brain, excrescences, polypi, and hydatids adhering to it, obstructing its functions, and likewise ulcerations. In some instances the pituitary gland is found in a diseased state, even when every other part of the brain has appeared natural. In numerous dissections the spinal cord has been found more or less diseased.

In epilepsy the intentions of cure should vary according to the cause which occasions the disease.

When it is sympathetic, and arises from worms, medicines possessed of the power of destroying or dislodging these vermin, ought to be employed.

*Treatment.*—As anthelmintics, the worm-seed given in tea-spoonful doses, or the expressed oil has been found very useful. The bark of the root of the yellow poplar and the male fern, are reputed excellent: and in all preparations given for the expulsion of worms, bitter root should be mingled, to act on the lower bowels and excite dejections. To prevent a recurrence, all kinds of food which might produce a predisposition should be strictly forbidden. Children frequently abuse themselves by their indulgence in the too liberal use of crude and indigestible food, such as unripe fruit, half-cooked diet, raw turnips, green

corn, &c. Doses should ever be regulated according to age, condition and circumstances attending the patient.

When they proceed from teething, that part of the gum over the tooth, or teeth, which appears to be tumefied and inflamed should be immediately scarified, the bowels kept open by warming medicine and emolient clysters, and the feet bathed in warm water.

When cases of epilepsy occur without any symptom of direct pressure on the brain, and there is occasional sickness attended with flatulency, disturbed sleep, and other marks of embarrassed digestion, lobelia emetics should be freely given, followed by gentle aperient tonic bitters.

Where there is great prevalence of acid from the imperfect digestion of vegetable food, and the bowels at the same time confined, the subcarbonate of potash and magnesia, may be very advantageously employed, in conjunction with golden seal and bitter root.

In the idiopathic epilepsy, the cure consists in avoiding the occasional causes, and in removing or correcting those which predispose to it.

The occasional causes which are to be avoided, are over-distension, turgescence, intoxication, fits of passion, and all other emotions of the mind; and as the disease is confirmed by repetition and habit, so the avoiding the frequent recurrence of it is of the utmost importance.

It is a fact well supported, that in some instances the disease has been found to continue from custom alone, after the original cause had long ceased to act. In such cases, our endeavors should be exerted to make nature discontinue this custom if possible. When an attack can be foreseen, no medicine, perhaps, under such circumstances, will be more likely to prevent an epileptic fit, than a lobelia emetic given about an hour before its approach.

In some cases of epilepsy, the patient lies in a stupid state after the paroxysm of convulsion has ceased, owing doubtless to a violent determination of blood to the head—his breathing is stertorous, with foaming at the mouth, and the pulse full, hard, and beating one hundred in a minute. In such cases, the first attempt should be directed to equalize circulation; hot bricks are to be applied to the feet, cold applications to the head, composition and No. 6 given internally, and soon followed by an emetic. Enemas should also be given.

When the predisposition is owing to a state of debility, which is sometimes the case, we are to obviate and prevent its effects by advising the patient to breathe a pure air, to make use of a generous diet, to take daily exercise adapted to his strength, particularly on horseback, and take freely of the tonic bitters in which should be combined a liberal quantity of nerve-powder. It must not be forgotten in the general treatment of this disease, that the frequent courses are of the most essential importance.

It has been observed that the epileptic paroxysm occurs chiefly at irregular periods, and is for the most part of short duration. There are, however, some instances on record of a singular exception to this rule in both cases. For it has occasionally lasted for two or three days with little or no remission. It has also returned at stated times, and with great frequency; with the revolution of the morn, or even of the night; in



one instance six times in a single day; and in another, on the revolution of the birth-day of each of the patient's parents. In a highly nervous temperament it is not difficult to account for such returns; since the dread of its return alone, when it has once established a circle of action, will form a sufficient cause of irritation. In a few instances it seems to have been hereditary; and perhaps in an equal number of congenital, appearing soon after birth, and mostly produced by a fright of the mother during pregnancy. Hildanus gives an example in which a fright of this kind was occasioned by the presence of an epileptic patient when suddenly attacked with a paroxysm: and other medical records narrate examples of a like effect on a sudden rush of a hare, or some other animal, against a pregnant woman.

Many persons habitually disposed to epilepsy are attacked immediately on waking in the morning from a sound sleep, when we may be inclined to think they would be at least liable to such surprise. Dr. Cullen admits that he finds a difficulty in explaining this curious fact. But when we reflect that epilepsy is a disease of irregular action, chiefly in a debilitated system, depending, where there is a confirmed diathesis, upon whatever may disturb the balance of perhaps any of the circulating fluids—and that this balance may be disturbed either by too much as well as too little excitement; when we reflect, moreover, that during sound sleep there is always taking place a considerable accumulation of sensorial power, and may at times be an excess of it—we shall no longer, I think, be at a loss to account for an adequate cause of this very singular phenomenon.

The general mode of treatment proposed for the last two diseases will apply to the present. The two-fold intention is to remove, as far as we are able, the exciting cause, and to allay the habitual irritation of the nervous system.

The diet in epilepsy should consist of such things as are light, nutritive, and easy of digestion, taking care to avoid whatever is apt to prove flatulent. During the intervals the patient is to keep himself as cheerful and tranquil as possible, carefully guarding against all violent passions or other emotions; and he should take care never to put himself in a hazardous situation, lest a fit should happen to attack him at that period.

When it is present, due care must be taken to prevent him from bruising himself in his struggles; and especially that he does not get his tongue between his teeth. Rubbing the nose, temples, and pit of the stomach with æther, may possibly help to abbreviate the fit by its action on the olfactory organ.

A smaller degree of epilepsy is where the sensibility and irritability remain, but there are spasmodic contractions of the muscles; hence we see many persons affected with twitchings of the face. There are also certain spasmodic pains that come on by paroxysms, which seem likewise of the epileptic kind.

When any of these arise as sympathetic affections, they are only to be cured by removing the primary disorder upon which they depend; but where they take place independent of any other disease, they are to be treated in the manner just recommended to be pursued in the cure of epilepsy.

## CATALEPSIS, OR CATALEPSY.

CATALEPSY is that state of the muscular system in which the patients, without fever, lose voluntary motion, and commonly the functions of the five senses, but preserve the mobility of the muscles, and keep the exact position wherein they are attacked, or arbitrarily placed by other persons.

Suppressed catamenia, worms, and painful emotions of the mind, as terror, grief, disappointment, profound meditation, anger, &c., have all occasioned attacks of catalepsy. Women are more frequently attacked by it than men. It sometimes changes into epilepsy, apoplexy, or melancholia, and has been known occasionally to terminate fatally in a few days.

We should, in treating the disease judiciously, endeavor to find out the occasional cause, and adapt our remedies accordingly.

The general rules laid down in the foregoing diseases, will answer every indication required in this.

## CHOREA SANCTI VITI, OR DANCE OF ST. VITUS.

THIS disease is marked by convulsive actions, most generally confined to one side, and affecting principally the arm and leg. When any motion is attempted to be made, various fibres of other muscles act which ought not, and thus a contrary effect is produced from what the patient intended. It is chiefly incident to young persons of both sexes, but particularly those of a weak constitution, or whose health and vigor have been impaired by confinement, or by the use of scanty and improper nourishment; and makes its attacks between the age of ten and fifteen, occurring but seldom after that of puberty.

By some physicians it has been considered rather as a paralytic affection than as a convulsive disorder, and has been thought to arise from a relaxation of the muscles, which being unable to perform their functions in moving the limbs, shake them irregularly by jerks.

Chorea Sancti Viti is occasioned by various irritations, as teething, worms, acrid matter in the bowels, offensive smells, poisons, &c. It arises likewise in consequence of violent affections of the mind, as horror, fright, and anger. Occasionally it depends upon an excessive impulse of blood in the brain, and in such cases it is greatly aggravated by whatever increases the action of the heart, and of course relieved by means that lessen this. In many cases it is produced by general weakness and irritability of the nervous system, and in a few it takes place from sympathy at seeing the disease in others, or by imitating them; hence it not unfrequently spreads in public seminaries, particularly among girls, if its progress is not checked by separation.

The fits are sometimes produced by a coldness of the feet and limbs, or a kind of tingling sensation that ascends like cold air up the spine;

and there is a flatulent pain in the left hypochondrium, with obstinate costiveness. At other times the accession begins with yawning, stretching, anxiety about the heart, palpitations, nausea, difficulty of swallowing, noise in the ears, giddiness, and pains in the head and teeth, and then come on the convulsive motion.

These discover themselves at first by a kind of lameness or instability of one of the legs, which the person draws after him in an odd and ridiculous manner, as if it was paralytic; nor can he hold the arm of the same side still for a moment; for if he lays it on his breast, or any other part of his body, it is forced quickly from thence by an involuntary convulsive motion. If he is desirous of drinking, he uses many singular gesticulations before he can carry the cup to his head, and it is forced in various directions, till at length he gets it to his mouth, when he pours the liquor down his throat with great haste, as if he meant to afford amusement to the by-standers. Sometimes various attempts at running and leaping take place, and at others the head and trunk of the body are affected with convulsive motions. The eye loses its lustre and intelligence, and the countenance is pale and expressive of vacancy; deglutition is occasionally performed with difficulty, and articulation is often impeded, and sometimes completely suspended. In the advanced periods of the disease, flaccidity and wasting of the muscular flesh take place, the consequence of constant irritation, of abated appetite, and impaired digestion.

In many instances the mind is afflicted with some degree of fatuity, and often shows the same causeless emotions, such as weeping and laughing, which occur in hysteria.

When the disease arises in children, it usually ceases again before the age of puberty, and in adults is often carried off by a change from the former mode of life. Unless it passes into some other disease, such as epilepsy, or its attacks are very violent, it is rarely attended with danger.

Where chorea arises in those of a weak irritable habit, and is wholly unconnected with any species of irritation, either of teething, worms, or acrid matter in the first passages, we should not employ evacuants, but have recourse to strengthening remedies, with the view of increasing the tone of the muscular system.

Chorea Sancti Vita attacks boys and girls indiscriminately; and those chiefly who are of a weak constitution, or whose natural good health and vigor have been impaired by confinement, or by the use of scanty or improper nourishment. It appears most commonly from the eighth to the fourteenth year. I saw it in two young women who were from sixteen to eighteen years of age. The approaches of chorea are slow. A variable and often a ravenous appetite, loss of usual vivacity and playfulness, a swelling and hardness of the lower belly, and, in general, a constipated state of the bowels, aggravated as the disease advances, and slight, irregular, involuntary motions of different muscles, particularly those of the face, which are thought to be the effect of irritation, precede the more violent convulsive motions, which now attract the attention of the friends of the patient.

These convulsive motions vary. The muscles of the extremities and

of the face, those moving the lower jaw, the head, and the trunk of the body, are at different times, and in different instances, affected by it. In this state the patient does not walk steadily; his gait resembles a jumping or starting; he sometimes cannot walk at all, and seems palsied; he cannot perform the common and necessary motions with the affected arms. This convulsive motion is more or less violent; and is constant except during sleep, when, in most instances, it ceases altogether. Although different muscles are sometimes successively convulsed, yet in general, the muscles affected in the early part of the disease remain so during the course of it. Articulation is now impeded, and is frequently completely suspended. Deglutition is also occasionally performed with difficulty. The countenance is pale and expressive of vacancy and languor. These circumstances give the patient a fatuitous appearance. Indeed there is every reason to believe that when the complaint has subsisted for some time, fatuity to a certain extent interrupts the exercise of the mental faculties.

Thermaier gives a case in which it was connected with a deeply melancholy temperament, and the limbs were in a state of constant snatching and trepidation: but this is a rare concomitant; nor is fatuity a constant sequel of it even in its most obstinate and chronic form. The present author has met with various instances in which the disease has continued with considerable violence from an early period to old age, without making any inroad whatever on the mind, or even spreading to any other joints, limbs, or muscles, than those at first affected. He once knew a man under the habitual influence of this complaint who was a good orator, always reasoning with great clearness, and delivering himself with much animation. The movements of his arms were indeed in ungraceful snatches, and the muscles of the neck frequently evinced a like convulsive start, yet not so as to intercept the flow of his periods, or to abridge his popularity. He knew another person for many years severely afflicted with the same complaint, who was an excellent musician, public singer, and composer of music; and this, too, notwithstanding that he was blind from birth. The person alluded to, is the late Mr. John Printer, of the Foundling Hospital. In walking he was always led on account of his blindness, and used a staff on account of the unsteadiness of his steps; but, notwithstanding every exertion, his gesticulation was extreme, and so nearly approaching the antics of a buffoon, that it was often difficult for a spectator to suppress laughter. Yet in singing and playing he had a perfect command over the muscles of the larynx and of the fingers; his tones were exquisitely clear and finely modulated; but his neck and head curvetted a little occasionally. He died when about sixty years of age, without ever exhibiting any debility of intellect.

There is a singular form of this disease which has been called by some writers *MALLEATIO*, consisting in a convulsive action of one or both hands which strike the knee like a hammer. In this case the hands are usually open, but sometimes clenched. Morgagni relates a case in which it came on even in the sound hand, if the finger of the affected one were extended. If the motion be forcibly stopped, the convulsion becomes afterward still more violent and general.



Where the system is disposed to hysteria, the paroxysm is sometimes extremely vehement, and partakes of the constitutional diathesis, making an approach to epilepsy, but distinguished from it by a continuance of consciousness and sensibility. Dr. White, of York, has given us a striking example of this mixed affection in a lady forty-two years of age, who had always a very weak system of nerves, and was rendered speechless for an hour or two upon any sudden surprise. In November, he tells us she was affected with a fresh paroxysm, which, upon being sent for, he describes as follows: "She complains of a violent pain in the right side of her face, and of universal erratic aches and soreness. There is a scorching heat all over the skin, except from the feet up to the ankles, which are as cold as marble. Pulse not quickened, but full; mouth dry, but no great thirst; body costive, which is indeed her natural habit, so as to oblige her to the frequent use of magnesia. She is regular as to the menses, the return of which she expects in five or six days. Appetite good, rather voracious; but her spirits always low after a full meal, especially dinner. Has a violent pain in the loins, which often shifts from hip to hip: the leg of the aching side being so much affected with stupor and numbness, that she drags it after her in walking. She falters in her speech at times, but this does not continue long. All the muscles of the body evince convulsive motions; not simultaneously, but successively: thus, her face is first violently affected, then her nose, eyelids, and whole head, which is thrown forcibly backward, and often twitched from one side to the other with exquisite pain. From this quarter the convulsive action removes first into one arm, and then into the other: after which both legs immediately become convulsed with violent and incessant motions, and in this manner all the external parts of her body are affected by turns. She is all the time perfectly sensible, and knows what limb is going to be attacked next, by a sensation of something running into it from the part already convulsed, which she cannot describe in words: but the foretoken has always been found to be true, though the transition is surprisingly quick. She is easiest in a prone posture." "Such," continues Dr. White, "has been her situation upwards of forty-eight hours with scarce a moment's remission, by which she complains of great and universal soreness. No words can convey an adequate idea of her odd appearance: and I do not in the least wonder that in the times of ignorance and superstition, such diseases were ascribed to supernatural causes and the agency of demons." Even Dr. White himself applies to it, perhaps in imitation to Sauvages, the name of *hieronosos*.

The predisponent cause of this disease is an irritability of the nervous system chiefly dependent upon debility, and particularly a debility of the stomach and its collatitious organs. Most of the diseases of children are seated in this quarter; and it is from this quarter therefore, that chorea commonly takes its rise, and shows itself in an early period of life; the ordinary occasional causes being bad nursing, innutritious diet, accumulated feces, worms, or some other intestinal irritant.

About the age of puberty there is another kind of general irritation that pervades the system; and where this change does not take place kindly, which is frequently the case in weakly habits, the irritation as-

sumes a morbid character, and is exacerbated by a congestive state of the vessels that constitute its more immediate seat : and chorea takes its rise from this cause.

In effect where the predisponent cause of an irritable state of the nervous system is very active and predominant, a local or temporary excitement of any organ, and almost at any period of life, by increasing the irregular flow or disturbed balance of the nervous fluid, will give rise to the convulsive movements of chorea : and hence it is that we find it so frequently united with an hysteric diathesis. On this account it has been produced by a fright, by a wound penetrating the brain through the orbit of the eye, by an improper use of lead, mercury or some other metal, and by suppressed cutaneous eruptions.

*Treatment.*—The success of the Thomsonian practice in this disease has been unbounded. Probably there never has been a case of chorea in the hands of a judicious practitioner—one upon whom thorough treatment had been put in requisition, without either experiencing great benefit, or a radical cure. The writer of this notice has seen one case of seven years standing, permanently cured by *one course of medicine!*

Every indication of treatment that is necessary to be fulfilled, is accomplished by the full courses of medicine, frequent steamings, and the aromatic tonic bitters.

## TETANUS, OR LOCK-JAW.

TETANUS is an involuntary and almost constant contraction of all or several of the muscles, while the senses remain perfect and entire. It may be considered as of two kinds, viz: symptomatic, the consequence of wounds; and idiopathic, occasioned by exposure to cold. In Europe the traumatic species is almost the only form in which tetanus occurs, whereas between the tropics the idiopathic tetanus is by no means unfrequent.

These affections arise more frequently in warm climates than in cold ones. They attack persons of both sexes, of all ages, temperaments, and complexions, but the male sex more frequently than the female, and those of a robust and vigorous constitution oftener than those of a weak habit. An idea is entertained by many, that negroes are more predisposed to attacks of tetanus than white people : they certainly are more frequently afflicted with it ; but this circumstance does not arise from any constitutional predisposition, but from their being more exposed to punctures and wounds in the feet, by nails, splinters of wood, pieces of broken glass, &c., from going usually barefooted.

Tetanic affections are occasioned either by exposures to cold when under profuse perspiration, sleeping in the open air on damp ground, or by the presence of irritating substances in the stomach and bowels, such as worms ; or by some irritation of the nerves, in consequence of local injury by puncture, incision, or laceration. Lacerated wounds of tendi-

nous parts prove in warm climates a never-failing source of these complaints. In cold climates, as well as in warm ones, the locked-jaw, or trismus, frequently arises in consequence of various surgical operations, particularly the amputation of a limb, or of gun-shot wounds. Some cases have been recorded where trismus was supposed to be owing to affections of the mind.

When the disease has arisen in consequence of a puncture, wound, or any other external injury, the symptoms show themselves generally about the eighth day; but when it proceeds from an exposure to cold, they generally make their appearance much sooner.

In some instances tetanus comes on suddenly, and with great violence; but it more usually makes its attack in a gradual manner: in which case a slight stiffness is at first perceived in the back part of the neck, which after a short time becomes considerably increased, and at length renders the motion of the head both difficult and painful.

With the rigidity of the head there is likewise an uneasy sensation at the root of the tongue, together with some difficulty of swallowing; and great tightness is perceived about the chest, with a pain at the extremity of the sternum shooting into the back. A stiffness also takes place in the jaws, which soon increases to such a height that the teeth become so closely set together as not to admit of the smallest opening. When the tetanic affection is confined to the jaws, the disease is called trismus.

In some cases the spasmodic affection extends no further; in others, the spasms at this stage of the disease, returning with great frequency, become likewise more general, and now affect not only the muscles of the neck and jaws, but likewise those of the whole of the spine, so as to bend the trunk of the body very forcibly backwards.

During the whole course of the disorder the abdominal muscles are violently affected with spasm, so that the belly is strongly retracted, and feels very hard, most obstinate costiveness prevails, and both the flexor and extensor muscles of the lower extremities are commonly affected at the same time, so as to keep the limbs rigidly extended.

The flexors of the head and trunk become at length so strongly affected as to balance the action of the extensors, and to keep the head and trunk so rigidly extended and straight as to render it incapable of being moved in any direction. The arms which were little affected before, are now likewise rigidly extended; the tongue also becomes affected with spasm, and being convulsively darted out, is often much injured by the teeth, the jaws at that moment snapping together. It is to this state of the disease that the term of tetanus has been strictly applied.

The spasms which recur at first every ten or fifteen minutes, besides being brought on by slight movements of the body and pressure on the abdomen, are, in the advanced stages, excited by the presentation of any substance, solid or fluid, to the lips, so as at first view nearly to resemble those in a person affected with rabies. Tetanus is seldom attended with either nausea or vomiting, or with any fever, but always with most violent pain.

The disorder continuing to advance, every organ of voluntary motion becomes affected, the eyes are rigid and immoveable in their sockets, the countenance is hideously distorted and expresses great distress, the

strength is exhausted, the pulse becomes irregular, and one universal spasm puts a period to a most miserable state of existence.

With regard to the duration of tetanus, when it proves fatal it generally carries off the patient before the tenth day, but sometimes before the fifth; and the younger the subject the more rapid the disease.

When tetanic affections arise in consequence of a wound, puncture, or laceration, they are almost sure to prove fatal as I never but once met with a recovery under such circumstances. The locked-jaw arising in consequence of an amputation, or gun-shot wounds, likewise proves usually fatal. When these affections are produced by an exposure to cold, they may in most cases be removed by a timely use of proper remedies, notwithstanding a considerable space will probably elapse before the patient will be able to regain his former strength. Although there is sometimes a great abatement of the spasms in tetanus, still they are apt to return with renovated force.

Dr. Parry has remarked, that if, in an adult, the pulse by the fourth or fifth day does not reach 100 or 110 beats in a minute, he believes the patient almost always recovers: if, on the other hand, the pulse on the first day is 120 or more in a minute, few instances, he apprehends, will be found in which he will not die. This observation respecting the acceleration of the pulse has not, however, been confirmed by other practitioners.

On dissections of this disease, slight effusions within the cranium have been observed in a few instances; but in by far the greater number nothing particular has been discovered, either in the brain or any other organ. In some instances, however, the blood is not found in coagula, but fluid like molasses, as in animals killed by lightning, appearing to indicate that the whole muscular fibres of the arterial system had partaken of the general spasmodic action.

The bodies of tetanic patients run rapidly into putrefaction after death.

It is stated by Baron Larrey, that in his examination of bodies of persons who have died of tetanus, he found the pharynx and œsophagus much contracted, and their internal membranes red, inflamed, and covered with a viscid reddish mucus. Others have discovered the intestines much inflamed, and in a few instances a yellow waxy fluid of a peculiar offensive smell, covering their internal surface; but whether the inflammation was primary, or only a consequence of the pressure of the abdominal muscles, which contract so violently in this disease, has not been decided. The inflammation in tetanus is however different from that observed in enteritis: in the latter, the intestines often adhere to one another by layers of coagulable lymph, recently thrown out; flakes of a curdled matter are frequently found, and pus is sometimes formed. In the inflammation attending tetanus there are no adhesions; nor is there any formation of pus.

The nerves of tetanic patients have been examined after death from the place of injury to their central termination, but no inflammation has been observable in any part of their course: the supposition, therefore, of an inflamed nerve being the cause of tetanus, ought to be rejected.

Although our endeavors may not be crowned with success, where te-



tanus or trismus arises from a lacerated wound, or puncture in some tendinous part, still we should by no means suffer the patient to remain in so miserable a state of existence without making some efforts to afford even a temporary relief or alleviation of his sufferings.

*Treatment.*—The reader is to bear in mind that the above is the result of the *regular practice*! and if you are a Thomsonian, you need *not* be admonished that one ounce of brown emetic, or pulverized seeds of lobelia, would be quite apt to relieve any case of lock-jaw that ever existed! and if it cannot be taken by the mouth in consequence of the spasms, three or four tea-spoonfuls should be put to a tea-cupful of warm water and used by the syringe, and repeated every fifteen minutes until relief is obtained.

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### SINGULTUS, OR HICCOUGH.

Hiccoughs are a spasmodic affection of the stomach and diaphragm, arising from some peculiar irritation. They are in general symptomatic, but in some instances they appear as a primary disease.

When they are idiopathic, they usually arise from an error in diet or from an acidity in the stomach. When symptomatic, they either come on towards the termination of some acute disease, attend on injuries done to the stomach and other viscera, or prevail as an affection attendant on hysteria.

Hiccoughs prevailing as a primary affection, are never attended with danger, and are in general easily removed; but when they arise in any acute disorder, or after a mortification has taken place, they may always be looked upon as the forerunners of death.

The appearances on dissection will depend entirely on the disease of which they have appeared as a symptom.

A common hiccough is often removed by taking a few small draughts of cold water, in quick succession, or by a sudden excitement of some degree of fear or surprise.

When these simple means do not answer, recourse must be had to the tincture of lobelia. Hiccoughs sometimes proceed from an acidity of the stomach; and hence it is that infants are very apt to be affected with them. When they arise from this cause, a little prepared chalk, or magnesia, joined with some carminative, will be most proper.

When hiccoughs arise at the close of any acute or malignant disease, or in consequence of mortification, no advantage can be obtained from medicine, or any other means whatever.

## PERTUSSIS, OR WHOOPING COUGH.

PERTUSSIS is a convulsive cough, interrupted by a full and sonorous inspiration, and returning in fits that are usually terminated by a vomiting or expectoration. In its first stage, it may be considered as a febrile disease.

Children are most commonly the subjects of pertussis, and it seems to depend on a specific contagion, which effects them in general but once in their life. In have said in general, because instances have occurred where the same person has been attacked with it a second time, although an idea contrary to this is entertained by the generality of practitioners. The disease being produced, the fits of coughing are often repeated without any evident cause; but in many cases the contagion may be considered as only giving the predisposition, and the frequency of the fits may depend upon various exciting causes, such as violent exercise, a full meal, the having taken food of difficult digestion, and irritations of the lungs by dust, smoke, or disagreeable odors. Emotions of the mind may likewise prove an exciting cause.

Pertussis often prevails epidemically, but does not, in this respect, appear to be influenced by any particular season of the year. It has, however, been observed to be much milder in warm climates than in cold ones; and it would seem, in conformity to this law, that the disease is found to be more severe in this country during autumn and winter, than during spring and summer. It arises generally from contagion, it is true; still it must be allowed that there is a principle independent of contagion capable of producing the complaint, and that this principle undoubtedly exists in the atmosphere, which it pervades to a certain extent; but what it is, and how formed, remains a curious subject for physical research.

The proximate or immediate cause of pertussis seems to be a viscid matter or phlegm lodged upon the bronchiæ, trachea, and fauces, which sticks so close as to be expectorated with the greatest difficulty. Some have supposed it to be a morbid irritability of the stomach, with increased action of its mucous glands: but the affection of the stomach which takes place in the disease, is clearly only of a secondary nature, so that this opinion must be erroneous.

The whooping cough usually comes on with an oppression of breathing, some degree of thirst, a quick pulse, and other slight febrile symptoms, which are succeeded by a hoarseness, cough, and difficulty of expectoration. These symptoms continue perhaps for a fortnight or more, at the end of which time the disease puts on its peculiar and characteristic form, and is now evident, as the cough becomes convulsive, and is attended with a peculiar sound, which has been named a whoop.

When the sonorous inspiration has taken place, the coughing is again renewed, and continues in the same manner as before, till either a quantity of mucus is thrown up from the lungs, or the contents of the stomach are evacuated by vomiting. The fit is then terminated, and the patient remains free from any other for some time, and shortly afterwards returns to the amusements he was employed in before the accession of the fit, expresses a desire for food, and when it is given to him,

takes it greedily. In those cases, however, where the attack has been severe, he often seems much fatigued, makes quick inspirations, and is rather faint.

On the first coming on of the disease there is little or no expectoration, or, if any, it consists only of thin mucus; and as long as this is the case, the fits of coughing are frequent and of considerable duration; but on the expectoration becoming free and copious, the fits of coughing are less frequent, as well as of shorter continuance.

By the violence of coughing, the free transmission of blood through the lungs is somewhat interrupted, as likewise the free return of the blood from the head, which produces that turgescence and suffusion of the face which commonly attend the attack; and in some instances brings on a hæmorrhage either from the nose or ears.

The disease having arrived at its height, usually continues for some weeks longer, and at length goes off gradually. In some cases it is however protracted for several months.

Although the whooping cough often proves tedious, and is liable to return with violence on any fresh exposure to cold, when not entirely removed, it nevertheless is seldom fatal, except to very young children, who are always likely to suffer more from it than those of a more advanced age. The danger seems indeed always to be in proportion to the youth of the person, and the degree of fever and difficulty of breathing which accompany the disease, as likewise the state of debility which prevails.

It has been known in some instances to terminate in apoplexy and suffocation. In some it lays the foundation for asthma and phthisis pulmonalis. If the fits are put an end to by vomiting, it may be regarded as a favorable symptom, as may likewise the taking place of a moderate and free expectoration, or the ensuing of a slight hæmorrhage from the nose or ears.

Dissections of those who die of the whooping cough usually show the consequences of the organs of respiration having been affected, and particularly those parts which are the seat of catarrh; hence the mucous membranes of the trachea and bronchiæ are commonly found in a morbid state. In many instances the lungs have exhibited highly morbid appearances, the trachea and its ramifications bearing vestiges of recent inflammation, and the aircells and the bronchiæ, near to their bifurcation, filled with a whitish purulent-looking mucus. Serous accumulation in the pericardium is also frequently met with. In some instances the lungs have been found adhering to the pleura. When the disease has been long protracted, or has degenerated into pulmonary consumption, asthma, or visceral obstructions, the glands of the mesentery are found in a hard and enlarged state.

*Treatment.*—In the treatment of pertussis, we are, in its first or early stage, to moderate its violence, and palliate the urgent symptoms; and at an advanced period, to arrest its progress, and put a stop to it by suitable remedies, sooner, perhaps, than it would spontaneously have ceased.

In all severe cases of whooping cough, where there is difficulty of breathing, a full pulse, much heat and other febrile symptoms; a full

course of medicine is indicated, and should not be neglected. But in the milder forms of the disease, but little else is necessary than nauseating doses of the tincture of lobelia, or some of the preparations of cough powder, (see last of 2d vol.) Frequent steamings and the bowels to be kept open by some gentle aperients. Much good is supposed to be derived by the timely application of a small plaster to the breast bone.

A flannel waistcoat should be worn by the patient, as no doubt it promotes absorption, and prevents the vicissitudes of the climate taking that effect on the skin which we know it does, acting thereby as an exciting cause of coughing.

Young children should lie with their heads and shoulders raised, and should be cautiously watched, that when the cough occurs they may be held up, so as to stand upon their feet, bending a little forward to guard against suffocation. Their diet should be light, and of easy digestion, and mucilaginous diluents should be taken freely.

### PYROSIS, OR WATER-BRASH.

A DISCHARGE of a thin, watery, or glairy fluid from the stomach, with eructations, and likewise a sense of burning heat in the epigastric region, are the chief characteristics of this disease.

It principally attacks those of a middle age, and more frequently affects females than males, particularly the unmarried. Those who are afflicted with fluor albus have been found to be much predisposed to it.

Being a disease not much known, and occurring but seldom, its causes have not been properly ascertained, but a low diet has been ascribed as being apt to give rise to it. The application of cold to the lower extremities, and distressing emotions of the mind, are likewise enumerated among its occasional causes.

The fits of pyrosis usually come on in the morning and forenoon, when the stomach is empty; and the first symptom which the patient perceives is a pain at the pit of the stomach, with a sense of constriction, as if it was drawn towards the back, and this is usually much increased by an erect posture. The pain, after proving severe, and continuing for some time, is followed by eructations and the discharge of a considerable quantity of a thin watery fluid, sometimes of an acid taste, but often quite insipid. In some instances however, it is very ropy, and of an appearance somewhat similar to the white of an egg.

*Treatment.*—A few courses of medicine followed by the tonic bitters will be found amply sufficient to cure the worst forms of this malady. Any existing constipation of the bowels must be removed either by enemas or aperient medicine.



## ANGINA PECTORIS.

AN acute constrictory pain at the lower end of the sternum, inclining rather on the left side, and extending up into the left arm, accompanied with great anxiety, violent palpitations at the heart, laborious breathing, and a sense of suffocation, are the characteristic symptoms of this disease.

Angina pectoris appears in general to be connected with a full habit, and an accumulation of fat about the heart and the cellular membrane. It has appeared in some instances to have a connexion with suppressed discharges. Mental emotion seems to be a powerful predisposing cause of the disease.

It is found to attack men much more frequently than women, particularly those who have short necks, who are inclinable to corpulency, and who at the same time lead an inactive or sedentary life. In most instances the attacks are sudden, and occur in those who have previously enjoyed good health. In a few cases spasms of the stomach, indigestion, and pains in the limbs, are not unusual, which are for the most part removed, or greatly diminished in violence, on the appearance of the disease. Although angina pectoris is sometimes met with in persons under the age of twenty, still it more frequently occurs in those who are between forty and fifty.

In slight cases, and in the first stage of the disorder, the fit comes on by going up hill, up stairs, or by walking at a quick pace after a hearty meal; but as the disease advances, or becomes more violent, the paroxysms are apt to be excited by certain passions of the mind, by repletion of the stomach, by walking, by riding on horseback, or in a carriage, or by sneezing, coughing, speaking, or straining at stool. In some cases they attack the patient from two to four in the morning, or while sitting or standing, without any previous exertion or obvious cause. On a sudden he is seized with an acute pain in the breast, or rather at the extremity of the breast bone, inclining to the left side, and extending up into the arm, about midway, accompanied by a sense of suffocation, great anxiety, and an idea that its continuance or increase would certainly be fatal. The paroxysm seems to consist very much in an impediment or suspension of the vital action of the heart.

In the first stage of the disease the uneasy sensation at the end of the breast bone, with the other unpleasant symptoms which seemed to threaten a total suspension of life by a perseverance in exertion, usually go off upon the person's standing still, or turning from the wind; but in a more advanced stage they do not so readily recede: the paroxysms make their attack in the night, they are much more violent, and in a few cases have continued for several days. During the fit the pulse sinks in a greater degree, and becomes irregular, but in some instances it is not much disturbed; the face and extremities are pale, and bathed in a cold sweat, and for awhile the patient is perhaps deprived of the powers of sense and voluntary motion. Sometimes the stomach is morbidly affected, becomes unusually irritable, and rejects whatever is swallowed. The disease having recurred more or less frequently during the space of some years, a violent attack at last puts a sudden period to his exis-

tence. He dies after having suffered all the agonies of dissolution ; for this is a complaint in which, during the fit, there are the most overwhelming sensations and apprehensions of instant death.

Angina pectoris had passed unnoticed among practitioners, until Dr. Heberden published a description of it many years ago in the Transactions of the College of Physicians of London ; since which many gentlemen of eminence in their profession have attempted to investigate its nature, and have obliged us with their observations, particularly Drs. Percival, Fothergill, Wall, and Black. By many of them it has been judged spasmodic. The late Dr. Parry, who has published his sentiments on it, was of opinion, however, that it is in reality a case of fainting or syncope, and as differing from the common syncope only in being preceded by an unusual degree of anxiety or pain in the region of the heart, and in being readily excited, during a state of apparent health, by any general exertion of the muscles, more especially that of walking. The supposed cause of angina pectoris (for which he has thought proper to substitute the name of syncope anginosa) is referred by him to a diseased state (generally ossification) of the coronary arteries of the heart.

The rigidity of the coronary arteries thus induced may act, he thinks, proportionably to the extent of the ossification, as a mechanical impediment to the free motion of the heart ; and though a quantity of blood may circulate through these arteries sufficient to nourish the heart, as appears in some instances, from the size and firmness of that organ, yet there may probably be less than what is requisite for ready and vigorous action. Hence, though a heart so diseased may be fit for the purposes of common circulation during a state of bodily and mental tranquility, and of health otherwise good ; yet when any unusual exertion is required, its powers may fail under the new and extraordinary demand. In conformity with this notion, Dr. Parry endeavors to show that the chief symptoms of the disease are the effect of blood retarded and accumulated in the cavities of the heart and neighboring large vessels ; and that the causes exciting the paroxysms are those which produce this accumulation ; either by mechanical pressure, or by stimulating in an excessive degree the circulating system ; in consequence of which the heart, weakened by the mal-organization, readily sinks into a state of quiescence, while the blood continues to advance in the veins. After this quiescence has continued for a certain period, the heart may recover its irritability, so as again to carry on the circulation, in a more or less perfect degree, from the operation of the unusual stimuli ; or death may at length ensue, from a remediless degree of inirritability in the heart. Such is Dr. Parry's theory.

In my opinion, the primary or original cause of angina pectoris in most cases is either ossification of the coronaries, or some organic lesion, (usually of an osseous nature,) existing at the origin of the circulation. In some instances an ossification, more or less complete, of the cartilages of the ribs, also accompanies this malady.

The disease in question has been considered by some German writers, as also by Dr. Darwin, as a species of asthma. Dr. Hosack, Professor of the Theory and Practice of Physic and Clinical Medicine in the

University of New York, is of opinion that the disease proceeds from fulness of the blood-vessels, more especially from a disproportionate accumulation in the heart and large vessels. The vast accumulations of fat, the effusion of water in the thorax, the distended state of the vessels, and even the bony deposits occasionally met with in the valves and vessels of the heart, lie induced to consider as the effects of such fulness.

We should always look on angina pectoris as attended with a considerable degree of danger at an advanced period of life, and where the paroxysms are frequent or violent; and it usually happens that the person is carried off suddenly. When it really depends upon an ossification of the coronary arteries, or any organic lesion existing at the origin of the circulation, it is evident that we can never expect to effect a cure.

*Treatment.*—During the paroxysms of angina pectoris, the patient is to be laid upon the bed, hot bricks applied to the feet and sides; at the same time No. 6 and composition should be freely given, followed by the third preparation, or the pulverized seeds of lobelia; that a speedy emetic operation may be produced.

A reaction of the system will never fail to be established by the adoption of this course, if the malady has not reduced the strength beyond the influence of remedial agents. Particular discipline should be observed in regard to subsequent treatment, that perfect relief may be affected. Frequent steamings, frictions, and the constant use of the tincture of lobelia, will be necessary aids in accomplishing this purpose to courses of medicine. This treatment will promote circulation in the limbs, determine to the surface, and thereby diminish the fulness of the heart and large blood-vessels. A pill composed of the extract of the dandelion, lobelia seeds, (unpulverized,) bitter root, cayenne, and golden seal, may be given to a good advantage.

The patient should sedulously shun every source of mental inquietude and irritation, and the circulation be vigilantly guarded from the influence of sudden gusts of passion. Moderate exercise in the open air, particularly on horseback, which will be preferable to walking, and not likely to bring on a fit, if the rider will be content with a moderate pace, should daily and regularly be taken, but no violent or long continued corporeal exertion should be attempted; nor should rising ground ever be ascended on foot without the utmost deliberation and care. Plain food, easily digestible, and not prone to fermentation in the stomach, should be made use of in small quantities at a time, being carefully masticated, and deliberately swallowed.

## PALPITATION OF THE HEART.

THIS disease consists in a vehement and irregular motion of the heart, and is induced by organic affections, a morbid enlargement of the heart itself, or of the large vessels, a diminution of the cavities of its ventricles from inflammation or other causes, polypi, ossification of the aorta or other vessels, plethora, debility or mobility of the system, mal-conformation of the thorax, and many of the causes inducing syncope.

During the attacks the motion of the heart is performed with greater rapidity, and generally with more force than usual, which is not only to be felt with the hand, but may often be perceived by the eye, and in a few instances even heard; there is frequently difficulty of breathing, a purplish hue of the lips and cheeks, and a great variety of anxious and painful sensations.

In some instances the complaint has terminated in death, but in many others it is merely symptomatic of hysteria and other nervous disorders, and therefore admits of a cure.

The treatment in this will not differ from that of the preceding disease.

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 ASTHMA.

THIS disease is a spasmodic affection of the lungs, which comes on by paroxysms most generally at night, and is attended by a frequent, difficult, and short respiration, together with a wheezing noise, tightness across the chest, and a cough; all of which symptoms are much increased when the patient is in a horizontal position.

Asthma rarely appears before the age of puberty, and seems to attack men more frequently than women, particularly those of a full habit, in whom it never fails, by frequent repetition, to occasion some degree of emaciation. Dyspepsia always prevails, and appears to be a very prominent feature in the predisposition. Its attacks are most frequent during the heats of summer, and in winter when heavy fogs or sharp cold winds prevail.

When the disease is attended with an accumulation and discharge of humors from the lungs, it is called the humid asthma; but when it is unaccompanied by any expectoration, it is known by the name of the dry or spasmodic asthma.

On the evening preceding an attack of asthma, the spirits are often much affected, and the person experiences a sense of fulness about the stomach, with lassitude, drowsiness, and a pain in the head. On the approach of the succeeding evening he perceives a sense of tightness and stricture across the breast, and a feeling of straitness in the lungs impeding respiration. The difficulty of breathing continuing to increase for some length of time, both inspiration and expiration are performed slowly, and with a wheezing noise; the speech becomes difficult and



uneasy, a propensity to coughing succeeds, and the patient can no longer remain in a horizontal position, being as it were threatened with immediate suffocation.

These symptoms usually continue till towards the approach of morning, and then a remission commonly takes place; the breathing becomes less laborious and more full, and the person speaks and coughs with greater ease. If the cough is attended with a free expectoration of mucus, he experiences much relief, and soon falls asleep.

When he awakes in the morning, he still feels some degree of tightness across his breast, although his breathing is probably more free and easy, and he cannot bear the least motion without rendering this more difficult and uneasy; neither can he continue in bed, unless his head and shoulders are raised to a considerable height.

Towards evening he again becomes drowsy, is much troubled with flatulency in the stomach, and perceives a return of the difficulty of breathing, which continues to increase gradually till it becomes as violent as on the night before.

After some nights passed in this way, the fits at length moderate, and suffer more considerable remission, particularly when they are attended by a copious expectoration in the mornings, and this continues from time to time throughout the day; and the disease going off at last, the patient enjoys his usual rest by night without further disturbance.

During the fits the pulse is not usually much affected, but in a few cases there is a frequency of it, with some degree of thirst, and other febrile symptoms. In some persons the face becomes turgid and flushed during the continuance of the fit, but more commonly it is pale and shrunk. Urine voided at the beginning of a fit is generally in considerable quantity, and with little color or odor; but after the fit is over, what is voided is in the ordinary quantity, of a high color, and sometimes deposits a sediment.

Asthma, but more particularly the spasmodic, is brought on by almost every thing which increases the action of the heart; and which stimulates and fills the vessels of the mucous membrane. Thus it is produced by intense heat, by lightness of air, by severe exercise, by strong mental emotions, by full meals, by stimulating drinks, by exposure to cold and atmospherical influence, and by certain effluvia, as those of hay, whether new or old, of sealing-wax, and of other burning substances. The dust produced by sweeping of a room, or making a bed, will frequently produce spasms of asthma.

Congestions of blood, or of serous and pituitous humors in the lungs, noxious vapors arising from a decomposition of lead or arsenic, impure and smoky air, cold and foggy atmosphere, sudden changes of temperature, scrofulous, rheumatic, gouty, psoric and scorbutic acrimony; dyspepsia or irritation in some of the abdominal viscera, but particularly in the stomach; irritation of the bronchial system by aerial acrimony or other causes, suppression of long accustomed evacuations, frequent catarrhal attacks, erratic gout, general debility, water in the chest, aneurisms, polypi, or concretions of grumous blood in the large vessels, and the like, are the causes from which this formidable disease may arise in different individuals. In some instances it proceeds from an

hereditary predisposition, and in others from mal-conformation of the chest.

Asthma having once taken place, its fits are apt to return periodically, and more especially when excited by certain causes, such as by a sudden change from cold to warm weather, or from a heavier to a lighter atmosphere; by severe exercise of any kind which quickens the circulation of the blood; by an increased bulk of the stomach, either from too full a meal or from a collection of air in it; by exposures to cold, obstructing the perspiration, and thereby favoring an accumulation of blood in the lungs; by violent passions of the mind; by disagreeable odors; and by irritations of smoke, dust, and other subtle particles floating in the air.

A consequence of convulsive motions is the habit of repetition the muscles have contracted by laws peculiar to the animal economy; so asthma is believed to depend frequently upon this cause.

The proximate or immediate cause of the disease has, by Dr. Cullen, and most other writers, been supposed to be a preternatural or spasmodic constriction of the muscular fibres of the bronchiæ, which not only prevents their being so dilated as to admit of a free and full inspiration, but also gives them a rigidity, which interferes with a free and full expiration.

This doctrine has, however, been disputed by Dr. Bree, who, in a very ingenious treatise on this disease, offers it as his opinion, that irritation seated within the air-cavities, and arising either from an effusion of serum, or from aerial acrimony, is the true proximate cause of convulsive asthma. The mucus which is excreted in the course of the disease, and which has been looked upon by Dr. Cullen and others as only an effect, Dr. Bree views as a prominent cause of the paroxysm; or, when it is absent, only yielding to a different cause equally irritating to the organ, and exciting spasmodic contractions of the respiratory muscles.

Dr. Darwin says, that whatever may be the remote cause of the paroxysms of asthma, the immediate cause of the convulsive respiration, whether in the common asthma, or in what is termed the convulsive, which are perhaps only different degrees of the same disease, must be owing to violent voluntary exertions to relieve pain, as in other convulsions; and the increase of irritability to internal stimuli, or of sensibility during sleep, must occasion them to commence at this time.

Asthma usually diminishes as soon as a mucous secretion begins to take place. This fact is convincing proof of a preternatural fulness of the vessels of the mucous membrane of the bronchiæ, so as to impede free respiration, and to produce all the symptoms of spasmodic asthma.

The sudden accession of the paroxysms generally after the first sleep, their returning at intervals, and the sense of constriction about the diaphragm, occasioning the patient to get into an erect posture, and to fly for relief to the cold air, will readily distinguish asthma from other diseases.

If the attacks of asthma are neither frequent nor severe, the constitution unimpaired, and the patient is young, there may be a possibility of removing the disease entirely; but where it comes on at an advanced period of life, has frequent paroxysms, and proceeds either from an hereditary predisposition, or from a condition of the body subject to se-

rous defluxions, it may be impossible to eradicate entirely that tendency to a recurrence. By changing into other diseases, as consumption and hydrothorax, or by occasioning an aneurism of the heart or of some large vessel, a final cure is more tardy and less certain. But without such occurrences it is by no means attended with much danger, although it may seem in many instances to threaten almost immediate death by suffocation. Dropsical swellings of the lower extremities, and some degree of diabetes, are complaints which frequently attend on asthma, where it has been of long duration.

The respiration becoming suddenly quick and short, the pulse weak and irregular, paralysis of the arms, great depression of strength, a scanty secretion of urine, and frothing at the month, indicate extreme danger.

The inspection of dead bodies has thrown but little light either on the nature or cause of this disease. A series of observations from Morgagni, and the works of many other anatomists, have however proved the existence of extravasated serum in the vesicles of the lungs of asthmatics, in most instances. Where the disease has been of long continuance, various morbid affections of the system have been discovered on dissection.

*Treatment.*—In the treatment of asthma we should endeavor to moderate the violence of the paroxysms, and when they are subsided, to hinder their recurrence. With the view of preventing any danger from the difficult transmission of blood through the lungs, and of obviating the plethoric state of the system, which might be supposed to have a share in producing a turgescence of the blood in the lungs, lobelia emetics should constitute our main reliance. All modern authors concur in this opinion. While they say that lobelia is poisonous and an unsafe medicine in almost all other diseases—yet it is freely recommended and given in this. Regular courses of medicine should always be resorted to, to free and cleanse the internal system, with the proper intermediate exhibition of No. 6 and composition. The adoption of this course will rarely fail to afford immediate and permanent relief.

The vapor bath will be found a powerful and efficacious means of relief, in severe paroxysms of asthma, either before or after an emetic; and where its application is practicable it should not be omitted.

If the patient is laboring under any degree of debility a suitable tonic course should be advised. Whenever any of the causes above enumerated surround the individual who is a subject of this complaint, and any indications admonish him of its approach, the tincture of lobelia must be liberally taken, to ward off an attack.

As the free passage of air to and from the lungs is oftentimes obstructed by a lodgment of mucous matter, its expulsion may be promoted by any of the expectorants recommended under that head. (See Compounds last of second vol.)

In the intervals of the attacks, it will be highly necessary for the patient to avoid the various exciting causes; to keep the digestive functions in a proper state; to guard against atmospherical vicissitudes, and to keep up a regular and uniform excretion from the pores of the skin by flannel and the frequent use of the vapor bath: lastly, to maintain as even a state of mind as possible, remembering that asthma is more alarm-

ing than dangerous, and that it rarely proves fatal, unless when complicated with, or in inveterate cases terminating in, some organic disease of a vital organ.

A dry and settled atmosphere is most friendly to asthmatical people, not only because it is free from impure vapors, but also as having more elasticity to press upon the vesicles of the lungs. While some asthmatical persons cannot live, however, with any comfort in the atmosphere of large cities, there are others again who feel themselves better in an air replete with gross effluvia, and breathe with greater ease in a crowded room where there are several candles and a fire. Indeed the removal from a cold to a warm climate is sometimes found beneficial.

In every species of asthma the patient's diet should consist of such things as are light and easy of digestion, carefully avoiding at the same time whatever may tend to generate flatulency: and as many kinds of vegetables are apt to be attended with this effect, they are almost all improper. Animal food of the lightest kind, taken in a moderate quantity, so as not to overload the stomach, will be the most proper for asthmatics.

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## HYDROPHOBIA, RABIES, OR CANINE MADNESS.

THE commencement of hydrophobia is marked by unusual anxiety, timidity, and sighing, severe pain in the epigastric region, difficult and painful deglutition of all liquids, accompanied by a sense of suffocation, dryness of the tongue and fauces, a small weak pulse, and slight pyrexia; its progress and close, by continual watching, laborious respiration, intolerance of light and the motion of air, a discharge of viscid saliva from the mouth, and not unfrequently by convulsions.

The disease arises from the introduction of a small portion of the poison by the bite of a rabid animal, and that commonly of the canine or cat kind, as being those which are the most domesticated. Some of the old writers have asserted, that it has occurred from the contact of the saliva with the skin, without the intervention of the poison of a rabid animal, and independently of any bite, or the infliction of any apparent injury: but the possibility of this I much doubt. At any rate the occurrence is to be considered as very rare indeed.

There can be no doubt however, but that the symptoms exactly resembling those of the genuine rabies canina have arisen in the human body from other causes. Local irritation from wounds in irritable habits, especially when conjoined with a perturbed state of the passions, and also violent affections of the mind, independently of corporeal injury in hysterical and hypochondriacal constitutions, have at times produced all the pathognomic symptoms of canine madness. Violent alternations of heat and cold, and all other causes which induce great debility, and at the same time increase the irritability of the system, have also at times proved adequate to the production of symptoms exactly corresponding



with those of rabies. Such cases have been denominated by medical writers, spontaneous hydrophobia.

A few have gone so far as to doubt the existence of this affection, as arising from the bite of a rabid animal and an absorption of the virus, contending that all the phenomena witnessed in this terrific malady may be referred to nervous irritation, from terror and apprehension of its occurrence, and are wholly independent of the saliva, *erroneously*, they think, considered poisonous; but the fallacy of this hypothesis has been most satisfactorily ascertained.

Many have doubted whether madness can arise in animals without preceding contagion. Some cases recorded by M Rossi evidently demonstrate, however, that animals previously healthy become capable, when enraged or irritated to a high degree, of communicating disease by their bite; a circumstance which, although long credited by the vulgar, wanted the support of direct evidence to establish it satisfactorily.

The fact of rabies sometimes arising spontaneously appears to be decidedly established by Mr. James Gillman: for he records an instance where a dog that was chained in a yard, without any kind of intercourse with animals capable of inoculating the disease upon him, had it in its genuine form, which was verified by the effect produced by his saliva.

Food of a highly putrid nature, a deficiency of water to assuage thirst, severe exercise during very sultry and dry weather, and a certain state or peculiarity in the atmosphere similar to what produces epidemics of other kinds in the brute species, may possibly be capable of giving rise to madness in the canine and cat species, as well as a long continued worrying of the animal. Some physicians, however, are disposed to dispute the efficiency of these remote causes; and maintain the actual infection from a diseased animal, by an inoculation of the poison, to be the sole exciting cause. There are, however, strong presumptive proofs that rabies does originate spontaneously in quadrupeds; and carnivorous animals seem most, if not alone liable to it as a spontaneous disease.

It does not appear, however, that madness is so prevalent among dogs in warm climates as in cold ones; for during a residence of many years in the West Indies, says Dr. Thomas, I never met with a single occurrence of the kind.

We are also informed by various writers, that canine madness is a stranger to South America, and according to the testimony of Volney it is equally unknown in Egypt and Syria. Mr. Barrow also tells us, that notwithstanding the heat of the climate at the Cape of Good Hope, and though the dogs are fed in the interior by the Caffres on meat in a highly putrid state, still the disease is unknown there. It is likewise mentioned by a missionary, that canine madness is a malady unknown in Paraguay, a country where beasts of every description are frequently destroyed both with the burning heat of the atmosphere and long thirst for want of water: which last is not to be obtained for many leagues in some places.

Rabies seem to arise from a specific contagion, which being once produced by causes unknown, continues to be propagated by the intercourse which dogs have with one another. It is alledged that the dis-

temper is not communicable from one hydrophobous person to another, by means of a bite or any other way; but this seems to require further confirmation.

The possibility of reproducing this disease by inoculation of the quadruped with virus secreted in the human system, had long remained a doubtful fact, having often been tried without success; but this point seems now determined by Messrs. Magendie and Bresslet having succeeded in affecting a dog with rabies, by inoculating him with the saliva of a man under that disease.

We have no proof that any of the secretions of a rabid animal but the saliva can excite hydrophobia. It is known to a certainty, that the specific poisons of rabies exists in the saliva, but it has been a question how far the fluids and solids have been generally contaminated. The experiments of Mr. Gillman have furnished results which go far to prove that the infecting material of rabies is hardly to be found but in the saliva.

A large portion of such persons as have really been wounded by the bite of a rabid animal are never affected with the disease. Mr. Hunter mentions an instance of twenty persons being bitten by the same dog, and only one was seized with it. It is therefore obvious, that different persons are not alike predisposed to be acted upon by the same contagion, and likewise that the predisposition to receive contagion varies in the same person at different periods. The depressing passions, as well as other causes producing debility, probably may predispose the system to the action of this virus.

In the canine and cat species, about seven or eight days may be considered as a fair average of the shortest period in which rabies shows itself after the animal is bitten, and six or seven weeks the longest period from the date of the bite. In the human species, only a few days have in some instances elapsed previous to the symptoms showing themselves; but the most common time of their appearance is from twenty to forty days after the bite. There are no well-authenticated instances of the poison lying dormant longer than eleven or twelve months; and we may therefore consider a person pretty safe at the expiration of a year without any symptom appearing.

In the cases quoted by authors where canine madness is said to have occurred at the distance of many years from the communication of the supposed poison, we may justly consider them either as instances of spontaneous hydrophobia, as before mentioned, or as such other diseases as occasionally exhibit the anomalous symptoms of an inability to swallow fluids, and an aversion to the sight of them: the poison of a rabid animal has had no share in their production. The frequent occurrence of an aversion to fluids, and of great difficulty in swallowing them in women affected with hysteria, have been noticed by many writers, and some of these facts demonstrate that all the symptoms of canine madness have been brought on by violent affections of the mind in irritable and delicate habits. The fatal termination of some of these instances, tends further to confirm the strictness of analogy between rabies and hysteria. Possibly some cases also of tetanus, in which there has been much local irritation in an excitable habit, conjoined with a perturbed state of the

passions, may have been mistaken for hydrophobia, by exhibiting symptoms exactly corresponding with those of rabies canina.

Rabies in a dog is attended with the following appearances: he generally shows some marked deviation from his accustomed habits. In those which are domesticated, as lap-dogs, some strange peculiarities have been observed, as the picking up of the different little objects, such as paper, thread, straw, &c., or any thing which may happen to be presented to their notice. Sometimes they show a depraved appetite, and eat their own excrement, or lap their own urine. Still, however, in this stage they seldom attack any person unless irritated to it. Although a diseased dog often observes the usual obedience to his master, and evinces the same attachment, still he is usually extremely irritable, and always treacherous, suffering any one to fondle him, but suddenly snaps or bites with the smallest provocation. In the progress of the disease, his eyes sometimes become inflamed, a purulent discharge issues from the lids. Instead of barking, he often makes a dismal howl, and has usually a listless and melancholy appearance.

The term hydrophobia, as applied to dogs, is highly exceptionable, as the animal, instead of showing any dread of water, which has generally and popularly been considered as marking the disease, seeks it in most instances with avidity, and laps it incessantly. A late writer on the diseases of dogs very justly notices the evil that this opinion has led to in lulling into dangerous security persons bitten by dogs actually rabid, and in particular refers to an instance in which an eminent physician, on being consulted by a person who had been bitten, recommended that no precautions might be taken, because he was informed the dog could drink. Another absurd popular error noticed by this writer, is the opinion that the worming a dog, which is merely removing the frænum from the tongue, will prevent his becoming rabid at any future time.

As rabies advances, the animal becomes extremely anxious and impatient, and has an inordinate desire to gnaw every thing around him. When chained or confined, he uses his utmost endeavors to break loose, and if he succeeds, he wanders about seeking other animals to bite, particularly some of his own species. It has before been observed, that frequently he does not avoid water, but laps it greedily, still in this stage of the disease he is often deprived of the power of swallowing it. Very often he has the appearance of being paralytic behind, and labors under an inflammation in his bowels, which occasions him to sit on his rump, seemingly in great pain. In the last stage, all the preceding symptoms are highly aggravated; he now becomes very feeble, his jaws drop as if paralyzed, and the saliva runs from his mouth; he wanders or rather staggers about with scarcely the power of biting, and at length being exhausted by disease, generally dies on the fourth or fifth day from its commencement. Few dogs survive the seventh.

In the human species, the general symptoms attended upon the bite of a mad dog, or other rabid animal, are—

The part bitten after some time begins to be painful; then come on wandering pains, with an uneasiness and heaviness, disturbed sleep and and frightful dreams accompanied with great restlessness, sudden startings and spasms, sighing, anxiety, and a love of solitude. These symp-

toms continuing to increase daily, the cicatrix of the wound becomes hard and elevated, a peculiar tingling sensation is felt in the part, and pains begin to shoot from the place which was wounded, all along up to the throat, with a straitness and sensation of choking, and a horror and dread at the sight of water and other liquids, together with tremors. The person is, however, capable of swallowing any solid substance with tolerable ease; but the moment that any thing in a fluid form is brought in contact with his lips, it occasions him to start back with much dread and horror, although he labors, perhaps, under great thirst at the time.

This appears to be a circumstance peculiar to the human race; for rabid animals do not evince any dread at water. It has indeed been remarked by a late writer, (and very justly in my opinion,) that the dread expressed, is not of the water, but of the act of deglutition. It may, however, be said, that the very sight of water produces this dread; but in that case the sight of the water associates with it the idea of deglutition.

Many other practitioners are also of opinion that this peculiar symptom of starting back with horror at the sight of water and other fluids, does not proceed from any dread of them, but from the fear of swallowing them, owing to the diseased state of the parts in consequence of inflammation. To swallow liquids, a greater contraction of the muscles of deglutition is requisite than to get down solids, and of course it produces a higher degree of pain and spasm, which explains the greater capability in the patient of being able to swallow solid substances than fluids.

Dr. Vaughan, denies, however, that the excruciating pain, which never fails to attend every attempt to drink, is felt in the fauces and throat. He says that it is the *scrobiculus cordis* which is principally affected, this being the part to which the patient always applies his hand. From this circumstance, therefore, from the presence of sardonic laugh, from the muscles of the abdomen being forcibly contracted, and from the sense of suffocation which seems to threaten almost immediate death, he is led to think, that in hydrophobia a new sympathy is established between the fauces, the diaphragm, and the abdominal muscles.

Dr. Rush, from some appearances which he observed on dissecting a boy who died of hydrophobia, from the bite of a mad dog, has been induced to suppose that it is the temporary closure of the glottis which produces the dread of swallowing liquids; hence the reason why they are taken in suddenly and at intervals. The same danger and difficulty attend swallowing the saliva; and hence, he thinks, the symptom of spitting proceeds, which has been so often noticed in hydrophobia. In the case here alluded to, the morbid appearances were as follow: the epiglottis was inflamed, and the glottis so thickened and contracted, as barely to admit of a probe of the common size. The trachea below it was likewise inflamed and thickened, and contained a quantity of mucus in it. The œsophagus exhibited no marks of the disease, but the stomach had several inflamed spots upon it.

Dr. Parry is of opinion, that the part which is primarily affected, so as to give rise to the symptom denominated hydrophobia, is not the pharynx, œsophagus, or stomach, but the upper portion of the trachea,



together with other parts of the apparatus concerned in the function of respiration.

In the course of the disease a vomiting of bilious matter comes on, and intense high fever ensues, attended with continual watching, great thirst, dryness and roughness of the tongue, hoarseness of the voice, and the discharge of a viscid saliva from the mouth, which the patient is constantly spitting out; together with spasms of the genital and urinar organs, in consequence of which the evacuations are sometimes forcibly ejected. In general he is incapable of enduring light, or the motion of the air; his respiration is laborious and uneasy, but his judgment is unaffected, and as long as he retains the power of speech his answers are distinct. In some few instances a severe delirium arises, and closes the tragic scene; but it more frequently happens, that the pulse becomes tremulous and irregular, that convulsions arise, and that nature, being at length exhausted, sinks under the pressure of misery. Death, by the ordinary means of the mineral practice, takes place about the third or fourth day.

The appearances to be observed in the human species on dissection in hydrophobia are, unusual aridity of the viscera and other parts; marks of inflammation in the lower portion of the œsophagus and cardiac extremity of the stomach, and even in the stomach itself. Some marks of inflammation are likewise to be observed in the brain, consisting in a serous affusion on its surface, or in a redness of the pia matter; which appearances have also presented themselves in the dog. Now and then we meet with an accumulation or effusion of blood in the lungs. In some cases of dissection, not the least morbid appearance has been observed either in the fauces, diaphragm, stomach, or intestines. The poison has therefore been conceived by some physicians to act upon the nervous system, and to be so wholly confined to it, as to make it a matter of doubt whether the qualities of the blood are altered by it or not, or whether the poison at all enters the system by the absorbents. As far as my knowledge extends, the lymphatic glands in the course of absorption have never been found diseased. On the development of the symptoms of hydrophobia, the pain beginning in the bitten part appears indeed to follow rather the course of the nerves than that of the absorbents.

On opening rabid animals, slight marks of inflammation about the epiglottis and pylorus, with occasionally some livid marks in the villous coat of the stomach, are now and then to be observed, but sometimes no appearances of inflammation either in the stomach or elsewhere are to be observed, on inspecting the bodies of these animals.

*Treatment.*—Without hazarding the application of the term *supererogation*, we are free to say, that this most formidable of all diseases that has apparently hitherto resisted every kind, quality, and quantity of treatment since its introduction into the world, (and it is of very ancient origin,) is safely controled by the Thomsonian remedies, if advised in suitable season. The strongest preparations of lobelia should be given with an unsparing hand. The vapor bath should be brought to bear upon the patient as soon as practicable, as an important auxiliary, and the steamings should be frequent and protracted. No definite rules can be

laid down with regard to the quantity of medicine that would be necessary to be given in hydrophobia, but it is very evident that the influence of lobelia must not be suspended, till the patient is free from danger.

From these directions, then it may be inferred that *full* and *thorough* courses of medicine must be repeated every six or eight hours—in other words, one protracted course must be put in requisition till this terrific disease is subdued.

To obtain a local action upon the part where the virus has been introduced, the pulverized seeds of lobelia should be made up in the third preparation, and applied in the form of a poultice, and renewed every two or three hours.

## COLIC.

WRITERS have divided colic into a great many varieties; but as most of these distinctions are mere nosological refinements, I shall notice those only which have a practical bearing.

The most common variety of colic is that which is occasioned by irritating and indigestible articles of food, and which Dr. Gregory, from this circumstance, calls *accidental colic*; but which is more commonly designated by the term flatulent, from the prominent symptoms of indigestion and flatulency which always attend this painful affection.

1. *Flatulent Colic*.—A weak and irritable state of the digestive organs, predisposes in an especial manner, to this variety of colic. In persons so predisposed, even the ordinary articles of food will sometimes give rise to the disease; and when food of an indigestible character is taken, more or less suffering from colic is almost inevitable. Salted meats—all kinds of pastry—crude vegetables, such as cucumbers, celery and unripe fruit—sour fruit—fresh and warm bread, &c., are especially apt to excite the disease in persons laboring under weak digestive powers. When articles of this kind are received into the stomach, no inconvenience is usually felt until an hour or two after they are swallowed. In some instances, where the stomach is weak and irritable, the food passes into the bowels in an imperfectly digested state; in which case, the colic pains may not come on for several hours after eating, and usually occur most severely about the umbilical region. More commonly, however, the pain commences in the stomach or duodenum, before the offending substances have had time to pass lower down in the alimentary canal. At first the patient experiences a sense of distension and uneasiness in the pit of the stomach, or occasionally in the left iliac region. This is soon followed by a dull, peculiarly distressing, and sickening pain in these parts, accompanied with a feeling of strong distension of the stomach and bowels. The pain now rapidly increases in violence, until it becomes extremely severe. In some cases, the pains continue, with but short *remissions*, for several hours. More commonly, however, they occur in severe paroxysms, with complete, though transient inter-

vals of ease. During the exacerbations, the patient is apt to move to and fro, with the body bent forwards, and the hands firmly pressed against the abdomen. When the stomach is the principal suffering organ, large quantities of air, are, from time to time, forced up, and this is generally immediately followed by some mitigation of the pain. When the colon is the part chiefly affected, the flatus sometimes passes off downwards; but this seldom takes place to any considerable extent, until the disease is about terminating. The bowels are always torpid in this affection, and the tongue soon becomes covered with white fur.

The diagnosis of this variety of colic is not attended with any difficulty. The relief obtained from firm abdominal pressure—the agitation and writhing motions of the patient; as well as the absence of fever, and the paroxysmal character of the pains, and frequent eructations of flatus, distinguish it prominently from gastro-intestinal inflammation. From *bilious* colic it may be distinguished by the absence of bilious vomiting, as well as of the yellow appearance of the eyes, of the extreme obstinacy of the constipation, and of the headache and bitter taste in the mouth, which characterize the bilious variety of colic. From *colica pictorum* it is readily distinguished by the hardness and retraction of the abdominal muscles, and the gradual accession of the colic produced by lead.

Flatulent colic is not attended with much danger, unless it terminates in inflammation of the gastro-intestinal mucous membrane—a termination which sometimes, though rarely, occurs. In some instances, where the flatulent distension is very great, it produces paralysis of a portion of the bowels, or destroys to a degree, the power of contraction, giving rise to habitual costiveness, and an especial tendency to a recurrence of the complaint. It is not improbable, that paralysis of a portion of the intestinal canal, induced in this manner, may be the principal occasion, in some cases of intussusception, or invagination of the bowels. Where flatulent colic is produced by very indigestible and irritating ingesta, it may give rise to rapid inflammation and gangrene.

2. *Bilious Colic*.—There is another variety of colic, which, from the manifest derangement of the biliary organs, and symptoms indicative of a superabundant or vitiated secretion of bile, has with propriety been denominated *bilious colic*.

This variety of the disease appears to depend on the same remote cause which gives rise to intermitting, remitting, and other forms of miasmatic fevers; and it accordingly most commonly occurs during the autumnal months—particularly after a long continuance of a very warm and humid state of the atmosphere.

Before the more urgent and characteristic symptoms of the disease come on, the patient generally experiences headache, loss of appetite, a bitter taste in the mouth, thirst, nausea, and occasionally bilious vomiting. After these symptoms have continued for an indefinite period of time acute pain in the stomach and bowels supervenes, moving at first from one part of the abdomen to another, though generally most severely felt about the umbilicus. This pain is often intensely severe during the exacerbations. In the early stages of the complaint, pressure on the bowels affords some degree of relief; but as the disease advances, the

abdomen becomes tender to the touch. Nausea and bilious vomiting occur more or less frequently from the commencement of the malady; and the patient always experiences a temporary abatement of his sufferings immediately after a spell of vomiting. Although the stomach is morbidly irritable, and extremely apt to be excited to vomiting, yet the bowels are almost invariably extremely torpid, being generally in a state of obstinate constipation from the beginning of the disease. The pulse seldom deviates materially from its natural condition during the early period of the complaint; but in the advanced stage becomes increased in fulness, force, and frequency. In violent cases, the hands and feet are sometimes quite cold during the exacerbations of the pains. About the second or third day of the disease, the eyes and skin become more or less suffused with a yellow tinge; and in some cases, indeed, these manifestations of biliary disorder occur several days before the pain in the abdomen commences.

In cases of great severity, the nervous system usually suffers considerable disturbance—the patient becoming despondent, and affected with slight spasmodic twitches in the muscles of the extremities. Dr. Staley, in the interesting paper on this disease just referred to, observes, that he has sometimes met with cases in which much numbness and tremor of the superior extremities occurred; and he saw one case in which the “arms were so completely paralysed that all power of voluntary motion was destroyed.” Paralysis of the wrists has indeed been frequently noticed as an occurrence in this affection, and this circumstance has been adduced as an argument in favor of the identity of this affection with the variety of colic produced by lead. Eructations of flatus are very common in bilious colic: and as in the former variety of the disease, they are always followed by a temporary mitigation of the abdominal pain.

That bilious colic appears to depend on the same remote cause which gives rise to autumnal bilious fever cannot be doubted. Dr. Rush includes this variety of colic among the usual forms or miasmatic fevers; and Dr. Staley observes, that he has uniformly found “the cases of bilious colic most numerous after a summer remarkable for the prevalence of bilious remitting and intermitting fever.

It is generally believed that the liver is morbidly active in this disease—and that a redundant secretion of bile is one of its most essential conditions. This idea is favored by the circumstance, that from the very commencement the fluid thrown from the stomach is always mixed with a considerable portion of bilious matter. There is much reason, however, to doubt the correctness of this opinion. Dr. Staley observes, with much plausibility, that if we reflect on the quantity of bile which is secreted in a healthy individual, and the obstruction which exists to its passage downwards, from the constipated state of the bowels in this disease, we can have no difficulty in accounting for the quantity of bile discharged by the mouth, although there be a paucity in the secretion. It is not improbable, indeed, that so far from there being too copious a secretion of bile, in this disease, there is, in fact, generally, a deficiency of this fluid. The functions of the liver are unquestionably deranged, and the bile secreted is, without doubt, vitiated. That this is the case, may



be inferred from the analogy which bilious colic bears to *cholera*—an analogy which has particularly been noticed by many writers. Dr. Gregory observes, “that bilious colic is closely allied to bilious diarrhoea and cholera, occurring along with them, and apparently differing from them only in some unessential features.” The opinion that the liver is in a state of torpor rather than of increased activity, is moreover strengthened by the fact, that so soon as the alvine discharges become bilious, an amendment of the disease usually takes place; and that however frequent the discharges may be, they seldom procure any particular relief when they are devoid of bilious matter. “When bilious stools are not brought away,” says Dr. Gregory, “it is common to find chocolate colored motions passed, frequently in vast quantity, reducing the patient to a state of great weakness.” Dr. Musgrave, in a valuable paper on this disease, states that he invariably found the liver in a highly congested state, and in the majority of instances there were strong marks of intestinal inflammation and its consequences.

The etiology of bilious colic does not appear to differ materially from that which is common to cholera, dysentery, &c. The atmospheric heat and miasmata act probably as predisposing causes; and sudden changes of atmospheric temperature, by which the cutaneous exhalents and secretory vessels of the liver are struck torpid, and the blood determined to the internal organs, constitute perhaps the principal *exciting* cause of the disease.

3. *Colica Pictorum*.—This variety of colic has been described under a diversity of names—as dry gripes; Devonshire colic; colica pictavenensis; colica saturnina; colica dammoniensis; rachialgia metallica; painter’s colic, &c. It generally makes its approaches in a very gradual manner—commencing with symptoms of gastric derangement, such as irregular and weak appetite, foul eructations, languor, slight nausea, constipation, with transient pains, and a feeling of weight and tightness in the abdomen, more or less drowsiness, and disinclination to mental and corporeal exertion. By degrees, the pain in the epigastrium and umbilical region becomes more and more severe and constant. The abdomen is hard, retracted, and somewhat tender to pressure, the bowels immoveably torpid, and the stomach, in most instances very irritable. The pain in the abdomen suffers occasional remissions, but, except for a moment after vomiting, and in mild cases, no perfect intermissions take place, as in the other varieties of colic. The exacerbations of the colic pains are protracted in duration, and exceedingly agonizing: and during the first two or three days, the retching and vomiting is generally very distressing, although a momentary mitigation is usually experienced, immediately after the contents of the stomach are ejected. In violent and rapid cases, or what may be called the acute form of the disease, the pains extend from the umbilical region upwards to the chest and arms, and downwards to the pelvic viscera, giving rise to paroxysms of violent pain in the region of the bladder and rectum, with much difficulty of voiding urine, and a distressing sense of weight, constriction, and bearing down in the lower part of the abdomen. During the exacerbations, the anxiety and agitation are extreme—cold sweats break out on the extremities and face; the countenance is pale, contracted, and expressive

of great suffering; and in some cases of very great violence, partial syncope, delirium, convulsions, paralysis of the wrists, and severe pains in the extremities occur. When remedial measures fail to make a favorable impression on the disease, the vital energies at last begin to sink; the abdominal pains abate; the stomach becomes extremely tender and puffy; the thirst unquenchable; vision imperfect; and finally, œdema of the feet, drowsiness, a pale, livid hue of the face, and occasionally, suppression of urine, and more or less tenesmus, with great difficulty of breathing ensues; and the patient dies under symptoms of apoplexy, or in a state of syncoptic insensibility.

Colica pictonum, if not subdued by an appropriate treatment, or if the remote cause continues to act on the system, or the patient has already suffered one or two attacks of the disease, is particularly apt to assume a chronic character, and to become associated with a variety of fixed and peculiarly distressing affections. The excretory and nutritive functions become impaired; the mental and physical energies torpid; the capillary circulation extremely inactive, giving rise to a pale, sallow, and leaden hue, and a shrivelled, dry, and harsh state of the surface of the body; the temper becomes irritable, desponding, taciturn, and gloomy; the countenance lurid, and expressive of deep suffering; the body emaciates; *the fore-arms become waisted and palsied*; the abdomen exceedingly hard, painful to pressure, and tumid; the legs œdematous, with pains in the joints, particularly in the ankles and toes, and great tenderness of the soles of the feet. The patient is extremely restless at night, his vision becomes weaker and weaker, the œdema extends up the legs, and the abdomen enlarges with dropsical accumulations. In some cases, paraplegia, epilepsy, mania, or total imbecility of mind ensues; and the patient is at last reduced to a state of complete exhaustion and emaciation, and dies under symptoms of apoplexy, or of dropsical effusion into the cavity of the thorax, pericardium, &c.

*Causes and nature.*—Lead, in whatever way and form it may be brought to act on the system, is almost the only well ascertained cause of this variety of colic. It would seem that the fumes of melted lead, and the white oxyde of this metal, are most apt to act injuriously on the animal system, and to give rise to this extremely distressing affection. It has been said, that the acetate of lead is incapable of producing this disease, and that no apprehensions need be entertained on this account, in prescribing the internal use of this article. It must be admitted, indeed, that the acetate manifests a much less deleterious tendency in this way, than any of the other forms under which this metal may exert its poisonous influence on the system. It would appear that the tendency of lead to produce colic is not confined to the human species. It has been distinctly noticed, that in the neighborhood of smelting furnaces and white lead manufactories, pigs, poultry, and other animals, occasionally become affected with a similar disease. Plumbers, painters, glaziers, gilders, the workers in lead mines, and in white lead manufactories, are most exposed to the influence of this poison, and of course almost peculiarly liable to this disease. Formerly, it was the practice, in some parts of Europe, to put *litharge* into new made wine, for the purpose of rendering it palatable, or to convert acid into sweet wine.

This gave rise to the extensive prevalence of this form of colic in some districts; and it is from its endemic prevalence at *Poitou* in France, from this cause, that the disease obtained the name of *colica pictorum*.

It has been contended nevertheless, that other causes are capable of producing this variety of colic. Crude wine, fresh cider, and other drinks, acidulated with fresh vegetable juices, are mentioned as possessing a tendency, under otherwise favorable circumstances, to produce this disease; but the correctness of this opinion has, I think, with great propriety been doubted; for if the circumstances attending the occurrence of instances of this kind are accurately investigated, it will, perhaps generally, be found, that in such cases these drinks had been tainted with lead employed in some part of the machinery or vessels made use of. Without doubt, such beverages may give rise to severe colic; but we have no satisfactory evidence that they are capable of producing the protracted train of distressing symptoms which are known to arise from the poisonous influence of lead. Larrey, and some other late writers assert, that atmospheric vicissitudes, in conjunction with malaria, are a frequent source of this form of colic; but it is probable, that when produced by these causes, the disease does not differ from the preceding variety—namely *bilious colic*. It has indeed been maintained, that the affections called bilious and lead colic are essentially the same; but, although the former often bears a very close resemblance in its course and phenomena to the latter, the more decided manifestations of biliary derangement in the former, and the great aptitude of the latter to pass into a chronic state and to become complicated with various affections of a most distressing character, among other distinctive circumstances, seem to indicate a radical distinction between them. Of the nature or proximate cause of *colica pictorum*, there is but little known of a satisfactory character. That the nervous system is prominently affected, is very evident; but whether the ganglionic, or the cerebral nerves, are the seat of the primary irritation, is by no means evident.

4. *Ileus*.—*Ileus* very generally depends on the intussusception, invagination, or inversion of one portion of the intestinal tube into another. This unnatural position of parts induces irritation, which eventuates in spasmodic contraction of the muscular coat of the intestine, thus constricting the caliber of the enclosed gut, and preventing the regular passage of the feces. The invagination commonly occurs at the termination of the small in the large intestines, the ileum and cæcum being enveloped within the colon. It, however, frequently happens also in other parts of the intestinal tube, and it is by no means rare to see invaginations in several places in the same individual. Invaginations of the small intestines frequently take place in children, and occasion but slight and temporary inconvenience. *Ileus* is not, however, invariably dependent on intussusception or mechanical obstruction of the intestinal tube. M. Corbin has related a case in which there was copious stercoraceous vomiting with colic pains and constipation, which was finally relieved by the purgative operation of a large dose of scammony. Cases, attended with painful stercoraceous discharges from the stomach, have occurred, in which the fluids which were injected into the rectum were

quickly vomited up, "showing that there was no permanent or organic obstruction in the bowels." An instance is mentioned in the *Medico-Chir. Rev.* (April, 1831,) in which "six or seven pints of warm water could be injected into the bowels, and soon afterwards it would be ejected by the mouth. No motion could be procured by the anus." Such cases may depend on an indomitable inversion of the peristaltic action of the bowels.

*Causes.*—This disease may be produced by every thing which may tend to excite irritation or spasmodic action in the stomach and bowels. Among these may be enumerated irritating and drastic cathartics, emetics, or indigestible substances taken into the stomach—such as coins, glass, cherry or peach stones, and unripe fruit. Ileus is also occasionally produced by hernia, by wounds, or other injuries of the abdomen, by cold externally or internally applied, by intestinal calculi, by organic derangement of the alimentary canal, or by any thing which either directly or indirectly tends to contract or close the intestinal tube.

*Symptoms.*—The indications of an attack of ileus are in some instances very insidious, and the organic cause or affection may have continued months or years unsuspected. It usually, however, comes on suddenly and without any premonition, by violent, spasmodic, and paroxysmal pains in the abdomen, eructations of wind, jactitation, frequent and ineffectual attempts at stool, distension of the abdomen, and all the symptoms of spasmodic colic. The bowels are constipated, although a discharge of the large intestines below the invaginated part may be accomplished by means of enemata or by nature. The stools are often mixed with, or consist entirely of coagulated blood. Upon examination of the abdomen, a hard, irregular, convoluted tumor may often be discovered, showing the situation, and perhaps the extent of the invagination. To the symptoms detailed, succeed obstinate constipation, hiccough, vomiting at first of the contents of the stomach, and ultimately of stercoraceous matter. The symptoms of inflammation may supervene upon those of spasm, in which case the disease will become greatly aggravated, and the life of the patient put in imminent danger. Should the spasmodic constriction and inflammation of the intestine be sufficiently severe, and continued for any great length of time, gangrene and mortification of the bowel will be the result, which will be indicated and accompanied by cessation of pain, prostration of strength, and all the distinguishing and alarming symptoms of mortification. The invaginated portion, however, becoming gangrenous, sometimes sloughs off, and cases of recovery in this manner have been recorded. Twenty years ago I saw a case of this kind, in which, by the efforts of nature, adhesions formed, several inches of the bowel sloughed off and passed away by stool, producing immediate relief and a rapid recovery. Nature may also accomplish a favorable termination of the disease by overcoming the constriction, and procuring the disengagement of the enclosed intestines.

The diagnosis of this disease is exceedingly difficult and uncertain. Attacking suddenly, with great violence, and without any premonitory symptoms, it is apt to be mistaken for spasmodic colic, colica pictonum, cholera morbus, or tympanitis. On the other hand, insidious as it frequently is, and accompanied with symptoms uncertain, and common to



some other complaints, its very existence is often unsuspected, and it may easily be mistaken for other diseases. So uncertain are the diagnostic symptoms, that John Hunter, who paid particular attention to this subject, has declared that its existence could never be satisfactorily ascertained during life. Violent and spasmodic pains occurring in paroxysms, however, with long continued and obstinate constipation; fecal vomiting; distension of the abdomen; with a hard, convoluted tumor about the arch of the colon, will indicate its presence with a considerable degree of certainty.

Ileus is always dangerous. Occurring in robust and plethoric habits, inflammation, followed by gangrene and mortification, is very apt to ensue. Without the timely use of the proper remedies in delicate and irritable habits, the spasmodic constriction is carried to a great extent, and is productive of effects equally dangerous.

It has been said that ileus is a spasmodic disease, and that inflammation, gangrene, and mortification, are the consequences of the pre-existent spasm. In a late publication upon "the diseases of the stomach and bowels," Abercrombie has advanced a new theory upon this subject. Having observed in a great number of post mortem examinations, that distension of the bowel above the invagination was a uniform occurrence, he conceives the distension to be a paralytic affection of the intestines, in consequence of which the fecal matter cannot be propelled onward through the canal. The intussusception has, according to this theory, nothing to do with a disease. Ingenious as this theory undoubtedly is, facts are wanting to support its claims to our notice. We have seen that ileus is produced by all the causes which give rise to spasmodic diseases generally—that it is indicated by symptoms peculiar to this class of affections, and we shall soon observe that every plan of treatment which has been pursued with any prospect of success, has been based upon the position of the spasmodic nature of ileus. The remedies which Abercrombie himself proposes, are such as are eminently calculated to allay spasmodic action, without any view to the paralytic affection of the bowel.

Dissections exhibit very clearly the pathology of ileus. The disease appears to expend its whole force upon the intestines about the intussusception. This intussusception is very satisfactorily presented to our view. One portion of the bowel is drawn within another, and is there firmly constricted—so much so, that in some instances considerable difficulty is experienced in extricating it. Surrounding this invagination, the marks of inflammation are every where apparent. In some parts, and particularly at the constricted point, gangrene and mortification will generally be detected. Above the intussusception the intestine will be found distended by feces or flatus, which had been prevented from passing through the constricted portion of the tube. Below, the intestine is generally in a state of emptiness and contraction. In some cases, several invaginations will be seen in different parts of the fecal tube—each one presenting to a greater or less degree the peculiarities just described. In the majority of cases, the invagination has been found at the arch of the colon, or at the termination of the small into the large intestines. The invagination, in the great majority of cases, will be observed

to take place from below upwards, although the opposite occasionally obtains.

*Treatment.*—The treatment of the different forms of colic cannot essentially vary. The indications that govern our prescriptions, are, to to allay the pain and spasm of the bowels; to evacuate the intestinal canal; to correct and excite a healthy action upon the liver and intestinal secretions, and to guard against the approach of inflammation in the stomach and bowels. These points can be accomplished with certainty and safety by the timely and proper administration of the regular courses of medicine. The bath should be prolonged to half or three-quarters of an hour. Enemas composed by the following formula should be repeated every half hour, until the urgent symptoms are abated, by a relaxation of the system and vomiting. Tea-spoonful pulverized seeds of lobelia, slippery elm, pulverized, and composition, each half tea-spoonful, tepid water a suitable quantity. The injections should be retained by the patient as long as possible. If the disease has been induced by an exposure to the poisonous effects of lead, either recommended by the mineralists, as medicine, or by working in the mines or manufactories, several months of regular coursing with intermediate tonics may be necessary to cleanse, purify, and strengthen the system. Who can read the foregoing description of the painter's colic (which is taken from Eberle's Practice,) without deprecating the use of such an article for medicine? What, give lead to cure a sick man of *whatever* disease, whose slow and insidious progress, we have seen, produces such a train of ills, which in the majority of instances in the hands of the regulars are so fatal?

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### CHOLERA-MORBUS.

CHOLERA-MORBUS is an affection of the alimentary canal, characterized by very frequent and violent vomiting and purging, with severe pain, and cramps in the muscles of the abdominal parietes and extremities. The disease almost always comes on suddenly. Pain, and a sense of tension in the epigastrium, are generally the first symptoms by which it makes its attack. This is soon followed by violent colic pains about the umbilical region, accompanied with exceedingly distressing nausea. In a few moments after the occurrence of these symptoms, vomiting and purging commence with extreme violence, and continue, with but very short intervals, until the system is exhausted, if speedy relief be not obtained. During the intervals between the attacks of vomiting the patient is usually harassed with continual nausea, and an indescribable feeling of distress in the epigastrium. The alvine discharges are at first thin and watery, and generally, with little or no admixture of bile; nor is the fluid ejected from the stomach, usually, of a bilious character, during the early period of the disease. After the disease has continued for an hour or two, however, the bile begins to make its appearance

pretty copiously in the evacuations, and towards the conclusion the fluid discharged consists, in many instances almost entirely of bilious matter. As the disease advances, the tormina become more and more severe and continual, and the purging and retching are almost incessant. One of the most distressing affections belonging to this disease are the extremely painful cramps which, in severe cases, occur in the abdominal muscles, and in those of the inferior extremities. In cases of no great violence, the cramps occur principally, and sometimes exclusively, in the muscles of the legs; but in rapid and very severe attacks, the muscles of the trunk, as well as of the upper and lower extremities, are alike affected in this way. The thirst is always exceedingly urgent; but every thing received into the stomach is almost immediately thrown up again. As soon as the disease is completely developed, the pulse is small, feeble, irregular or intermitting; the hands and feet become cold; the countenance pale, shrunk, and expressive of great distress; a cold sweat breaks out on the extremities and face; and extreme prostration speedily ensues.

Cholera is one of the most rapid and fatal forms of disease. It seldom continues beyond twenty-four hours, without terminating favorably or fatally; and in many instances it ends in death, in the course of three or four hours, and sometimes in a much shorter period. In the cholera of India, death generally takes place within two or three hours after its commencement. In this extremely fatal variety of cholera, the patient is generally suddenly seized with great prostration, unquenchable thirst, a scarcely perceptible pulse, cold and clammy sweats, cramps in every part of the body, inexpressible anxiety of feeling, extreme restlessness, syncope, excruciating tormina, retching, and very frequent stools of a thin, whitish, or starchy fluid. If the patient survive this, the first stage of the disease, which is by no means common, some degree of reaction usually ensues in the course of from twenty to forty hours; and the liver begins to pour out an abundance of dark, thick, vitiated bile, which is discharged in the stools, and which may be regarded as an indication of a favorable crisis in the disease.

*Etiology and Pathology.*—A superabundance of vitiated bile in the stomach and bowels, was formerly, and, by some, is still regarded as the immediate cause of this very dangerous malady. The term *cholera* is, indeed, sufficiently expressive of the notions once universally entertained, concerning the nature of this affection. Dr. Cullen says, “the matter ejected, both upwards and downwards, appears manifestly to consist chiefly of bile;” and Dr. Gregory, though he rejects the idea of its dependence on a redundant and vitiated secretion of bile, says that the disease “commences with nausea and unremitted *bilious vomiting*,” &c. In truth, almost all writers, up to the time of Dr. Bateman and Dr. James Johnson, mention a copious and vitiated bile as the exciting cause of this affection; but the erroneousness of this sentiment is now well known by all who have kept pace with the progress of pathological science. So far, indeed, from there being a redundant secretion of bile in cholera, there is actually a deficient formation of this fluid, from functional torpor of the liver; and it would appear that the hepatic torpor is in direct proportion to the violence of the disease. No one, indeed, who has attentively

observed the early symptoms of cholera, can for a moment doubt of the correctness of this statement; for, however abundant the discharge of bile may be after the disease has continued for some hours, this fluid never appears in the evacuations during the early period, or what may be termed the first stage of the disease. The observations and researches that have been published of late years—and they have not been limited—in relation to the pathology of cholera, render it evident, that the liver, and indeed the whole system of the portal circulation, are extremely engorged with blood. In the cholera of India, the liver, in subjects who die during the first stage of the disease, is always found enlarged, and greatly engorged with blood, and the internal surface of the stomach and bowels marked with large patches of highly injected and dilated vessels. So far, therefore, our knowledge of the pathology of this affection appears to be sufficiently certain; but how are we to account for the extreme irritability of the stomach and bowels, and the excessive vomiting and purging? Can hepatic torpor and congestion in the portal system of vessels give rise to this morbid condition of the alimentary canal? or are we to consider this state of the liver, and the general engorgement of the portal vessels, only as a concomitant phenomenon, and in no way causative of the characteristic gastric and intestinal affections? From some of the circumstances just mentioned, it would appear, indeed, that the hepatic torpor and congestion have no small share in the production of gastro-intestinal disorder. The fact, that the symptoms almost always begin to abate as soon as the liver resumes its functions, and pours out a copious flood of bile, strongly favors this opinion. Strong sanguineous congestion, and torpor of the liver, is almost always attended with great irritability of the stomach. In the malignant grades of bilious fever, the vomiting, during the first stage, is often incessant, and extremely distressing, whilst the fluid ejected is wholly free from bilious matter. If death takes place in this stage, the liver is always found exceedingly engorged with blood, and the vessels of the stomach are in a similar state of congestion; but when the disease continues until large evacuations of black and pitch-like bile take place from the bowels, an abatement of all the symptoms usually ensues.

With regard to the remote causes of cholera, it is manifest that high atmospheric temperature constitutes the principal agent concerned in its production. In our own climate this affection appears almost exclusively during the warm months of summer; but it is nevertheless probable that elevated temperature acts rather as an essential *predisposing*, than as an *exciting* cause of the disease. Cool and damp night air, or exposure to a current of fresh air after the liver and skin have been over-excited by the previous influence of solar heat and exercise, is one of the most common exciting causes of this affection. When the cutaneous and hepatic functions, while in a state of inordinate activity, are suddenly arrested by the influence of cold, the blood retreats from the surface to the internal vessels; the portal circulation becomes engorged, and the capillaries of the mucous membrane of the bowels strongly congested. This injected or engorged state of the capillaries of the mucous membrane of the alimentary canal, gives rise, we may presume, to morbid irritability of this structure, and, consequently, to the characteristic phe-



nomena of the disease. Much may also depend on the influence of miasmata in the production of this affection. The tendency of this agent to excite and derange the functions of the liver, is well known, and when operating in conjunction with high atmospheric heat, as it always does, its tendency to enhance the predisposition to this affection, is, no doubt, very considerable.

In some instances of intermitting fever, the paroxysms are ushered in by violent attacks of cholera, the vomiting and purging usually coming on towards the termination of the *cold stage*, and continuing until the febrile reaction is fully developed. Sometimes cholera returns in daily paroxysms, commencing with a slight cold stage, and terminating in free perspiration, without any distinct hot stage.

Cholera may also be excited by the direct irritation of indigestible and irritating articles of food and drink; but causes of this kind rarely produce the disease unless the system is predisposed to it by a debilitated state of the digestive organs, or by general relaxation and exhaustion from the influence of high atmospheric temperature.

*Treatment.*—The principal indications of prescription in this affection, are to allay as speedily as possible, the irritability of the stomach and bowels; to restore the action of the skin and liver, and to determine the circulation from the internal to the external parts. As the progress of the disease is extremely rapid, the most prompt and energetic means should be at once resorted to, with the view to moderate its violence. No. 6 and composition, will in most instances, meet efficiently, the exigencies of the disorder. Two large table-spoonfuls of the No. 6 may be given every ten or fifteen minutes in sweetened water, to an adult when the distress in the stomach and bowels is violent, followed by composition.

If the patient has rigors, or feels cold in any degree, he should be warmly covered up in bed and hot bricks applied to the feet. An emetic should be given immediately if relief is not obtained.

A compound prepared after the following recipe, has gained great notoriety among the Botanic fraternity, and justly too—for its power in removing as well as preventing this disease.

Take cayenne, xanthoxylum, golden seal, nerve powder, bay berry equal parts, one ounce, ginger, two ounces, mix and put into a small bag, and boil in one gallon water to two and half quarts, to which add six pounds loaf sugar, two quarts fourth proof brandy, and three pints of No. 6. This may be given in quantity as the urgency of the symptoms require.

## CHOLERA ASPHYXIA.—SPASMODIC, OR ASIATIC CHOLERA.

CHOLERA ASPHYXIA made its first appearance in August, 1817, at Jessore, a town about sixty miles distant from Calcutta, in Hindostan. Thence, it extended its ravages along the principal rivers and great roads, with a pretty uniform progress, until it had crossed the Indian peninsula, and broke out at Bombay, about one year after its commencement at Jessore. Having reached this point, this disease appeared, for a few years, to have attained the utmost western limit of its sway. In June, 1821, however, it made its appearance at Muscat, in Arabia, and advancing in a north-western direction through Persia, it reached Astracan, at the mouth of the Volga, in September, 1823, and, nearly at the same time, broke out at Tripoli, on the eastern coast of the Mediterranean. In 1830, it again made its appearance at Astracan; and thence extending itself rapidly throughout Russia, Poland, and Germany, it reached the eastern coast of the Baltic in the summer of 1831. Soon afterwards, the disease appeared in Sunderland, in England; and in the following spring it commenced its ravages in our own country.

*Symptoms.*—In many instances the approach of this disease is attended with giddiness, a slight degree of languor, and mental depression—a feeling of uneasiness and distension in the abdomen, and almost constant churning noise of flatus in the bowels. Slight cramps, affecting the fingers and toes, particularly during the night, frequently occur—and many complain of a peculiar numbness, and feeling of inability to move the limbs. These symptoms, are, generally, followed by moderate diarrhœa, the discharges being, usually, natural, and seldom attended with much griping. The duration of this stage is very various. In some instances, the diarrhœa continues for several days, before the characteristic symptoms of the disease supervene; in other cases, its duration is but a few hours; and, occasionally, the first intimation of the attack is a sudden extremely copious evacuation, the patient feeling as if the whole contents of the intestines were passing off at once. Sometimes, though seldom, the disease commences by nausea and vomiting alone, without any diarrhœa.

The first alarming symptoms are, commonly, a sudden feeling of faintness, giddiness, ringing in the ears, dimness of sight, uneasiness “amounting sometimes to great anxiety, or feelings of horror.” The bowels begin to rumble; a burning pain is usually felt at the pit of the stomach, and violent purging and vomiting ensue, followed by a feeling of great prostration. “If the attack occurs in the day, the patient sits down affrighted at his own situation, or if in bed, awakes, and lies for a moment astonished at the novelty of his feelings: there is a new influence that appears to pervade the whole body, a sensation as if of fluttering on the pit of his stomach, and as a sense of weight or constriction round the waist. This is followed by a prickling sensation in the arms and legs, extending sometimes to the fingers and toes; the hands and feet become cold, and bedewed with a copious clammy moisture, the pulse is usually oppressed and slow, sometimes quick and weak; and there is

often pain in the forehead." When, in this state, the patient raises himself in bed, or attempts to move, he immediately either feels sick, or is purged. The appearance of the fluid discharged by the stomach and bowels, resembles that of barley water, or of a solution of soap in hard water, consisting of a clear fluid, with more or less of a white flocculent matter floating in it. After the first choleric evacuation, cramps usually supervene. The flexors of the fingers and toes are first affected with spasm; the muscles of the thigh and leg are next attacked; and in some cases, the whole muscular covering of the abdomen and trunk is affected. The face soon acquires a deadly pale hue, attended with an expression of great anxiety and distress. The pain or burning sensation in the epigastrium increases; the hands exhibit a shrunken appearance, as if they had been long immersed in water; the skin, generally, is cold, damp, and sodden, and the eyes are sunk, and surrounded by a dark ring. At this period of the disease, there is often much restlessness and jactitation; in some instances, however, the patient lies quiet, and desires not to be disturbed. The whole surface of the body has, by this time, acquired a marble-like coldness, and a more or less livid or bluish hue. This lividity of the skin is particularly conspicuous on the hands, feet, face, and chest. The breath and tongue, also, are cold, and the whole surface is covered with a profuse, clammy sweat. The thirst is, generally, extremely urgent; the pulse at the wrist and arms is imperceptible, and the respiration is commonly slow, somewhat oppressed, and irregular. In old persons, a peculiar fetor, usually emanates from the body. During the whole course of the disease, the secretion of urine, and of bile, of tears and of saliva, is wholly suppressed. Notwithstanding the extreme coldness of the surface, there is often so great a sensibility to the impression of heat, that the application of external warmth gives great annoyance to the patient. Although the circulatory and secretory functions are almost wholly suspended, yet the sensorial powers continue unaffected, nearly, if not entirely, to the last. The patient is sensible of all that passes around him; he answers with distinctness and accuracy any question that may be put to him; though it may be in monosyllables only; while his hands are cold and bloodless, he yet retains the sense of touch, and even feels with increased sensibility, sometimes complaining of a painful impression of heat from the application of bodies of moderate temperature. He also, occasionally, retains considerable muscular strength; and the respiration sometimes goes on with ease and regularity, till within a few minutes of death. The whole exhibits an impressive picture of the death of one set of organs, while life still maintains its seat in others.

The preceding symptoms belong to what is, with propriety, called the second stage of the disease. When this, (the cold or blue,) stage does not prove fatal, it is invariably followed by more or less of arterial reaction, constituting the third stage of the malady. The liver and kidneys now resume their functions, though, doubtless, in a morbid or imperfect manner. When the febrile reaction is moderate, the patient usually, soon convalesces. More frequently, however, delirium and coma speedily ensue, and the patient dies in a state of apoplectic stupor. Sometimes local visceral inflammations are developed with the arterial

reaction ; and according to the observation of some writers on this subject, the stage of reaction occasionally assumes the character of a malignant fever, of a congestive or typhoid form, in which the tongue becomes more loaded, is redder at the tip and edges, and dryer; there is headache, the urine is highly colored; there is soreness upon pressure on the liver, stomach, and belly, the eyes are suffused and drowsy, the gums and lips are covered with a black sordes; the patient is pale, squalid, and powerless; the pulse low and languid, and these symptoms are commonly terminated in delirium and death.

The second or cold stage sometimes terminates in coma, with no other manifestation of increased arterial action than a slight throbbing of the carotids, and warmth of the chest. From this comatose stupor the patient can at first, generally, be roused for a moment; but in a short time, the coma becomes perfect, and death ensues, in perhaps a few hours. Occasionally the comatose state is preceded by sudden furious delirium; the patient raves wildly, but the struggle is usually short, and soon subsides into total insensibility.

The preceding description may serve to give a general view of the course and phenomena of this frightful malady; but it is proper to observe, that in relation to the violence or frequency of the purging and vomiting, great diversity occurs in different cases. In some instances, not more than two or three alvine evacuations take place; and cases have been witnessed in which no discharge whatever occurred from the bowels. I have myself seen a case, in which but a single alvine choleric discharge took place, although the patient speedily sunk into a fatal collapse. The evacuations sometimes occur without effort or uneasiness; at others they are thrown out with great force. Although the calls are often very sudden and irresistible, the evacuations are very seldom attended with griping or tenesmus. In the advanced stages of the disease the purging usually ceases, but in some cases a watery fluid issues from the rectum whenever the patient moves his body, or changes his position.

In some cases the vomiting is frequent and vehement; in other instances it occurs but seldom, and occasionally this evacuation is entirely absent. Dr. Kennedy states, that in certain epidemics of this disease, scarcely an individual case has manifested this symptom. Sometimes very large quantities of serous fluid are ejected with great force; at others, the contents of the stomach are brought up, without any effort, by an action apparently of the œsophagus, somewhat similar to that which occurs in rumination. The animal functions also, are disordered in very different degrees. In some cases the patients have been able to walk, and to perform many of their usual avocations, even after the circulation of the blood was so much arrested as to render the pulse imperceptible, at the wrist. In the majority of cases, however, the animal functions are early impaired, and in some instances great prostration of strength occurs as the disease is developed.

Spasm has been regarded as an essential phenomenon of this malady. Observation, however, does not confirm this opinion; for cases have been noticed in which all the other symptoms characteristic of this malady were present, without any spasmodic affection of the muscles of



voluntary motion. The spasms are generally much more violent in robust and athletic habits, than in such as are of feeble and relaxed habit of body. In the low and most dangerous form of cholera, spasm is generally wanting, or is present in a very slight degree. The spasms in this disease are of a mixed nature, partaking more of the tonic than the clonic character, the relaxations being less prompt and frequent than in epilepsy or convulsion, and seldom durable as in tetanus. In some instances spasmodic twitchings of the muscles have been noticed a considerable time after death.

From the foregoing description, it is manifest that the series of phenomena which characterize this malady, divide themselves into three distinct stages, viz: 1, the stage of irritation; 2, the stage of collapse; and 3, the stage of reaction. The first stage, however, is not always recognized, nor is it attended with any phenomena that can be regarded as peculiar to cholera, or as affording satisfactory diagnostic indications of its presence. It exhibits a more or less obvious state of morbid excitement of the nervous system, and disorder of the gastric and intestinal functions, which may arise from various causes, and pass away without being followed by the diagnostic symptoms of cholera. The characteristic or diagnostic symptoms of cholera do not exhibit themselves until the disease has advanced to its second stage; and it is only in this fully developed state of the disease, that it can be certainly recognized. The phenomena which characterize this stage of the malady, are, 1, frequent discharges from the stomach and bowels of a serous or watery fluid, resembling rice or barley water; 2, complete suppression of the biliary and urinary secretions; 3, profuse cold and clammy sweat; 4, a failure and almost total suspension of the action of the heart and arteries; 5, complete failure of the animal heat, as evinced by the icy coldness of the surface, and the cold tongue and breath; 6, a livid or bluish hue of the skin, with a corrugated state of the hands and feet; 7, a thick and black state of the blood; 8, spasms or cramps of the muscles, commencing in the extremities and proceeding to the trunk; 9, an early and extraordinary alteration of the expression of the countenance; 10, and finally, with all these violent symptoms, an almost undisturbed state of the mental faculties and sensorial powers.

It is manifest from this assemblage of symptoms, that the diagnosis of cholera, when fully developed, can very rarely be attended with any material difficulty. The disease with which spasmodic cholera would seem most liable to be confounded, is the ordinary cholera—the cholera-morbus. Where the evacuations are tinged with a yellow or greenish hue, where the matter vomited is bitter to the taste, while the skin remains warm and the pulse good, the disease may, with confidence, be regarded as ordinary bilious cholera; but where, after the first emptying of the primæ viæ, the evacuations are of a watery consistence, colorless, turbid, or white—when no urine is voided, when the surface becomes cold, the features collapsed, the spirits depressed, and the pulse flags, the case may almost certainly be regarded as cholera asphyxia. In the more advanced period of the disease, the total cessation of the pulse in the extremities—the icy-cold and clammy skin, the shrivelled, corruga-

ted and bluish appearance of the hands and feet, and the general depression, can leave no doubt as to the nature of the malady.

Concerning the essential pathological character of this extraordinary malady, very little is known that can be deemed satisfactory. It seems, indeed, very probable that the cause of the disease, whatever may be its nature, acts primarily on the nerves of the mucous membrane of the alimentary canal. In a great majority of cases, the approach of the disease is gradual, exhibiting a train of initial symptoms, clearly indicating a morbidly irritable condition of the stomach and intestines. The impaired digestion, the diarrhœa, or constant tendency to diarrhœa, the rumbling noise of flatus in the bowels, the pain or uneasy feeling in the pit of the stomach, the headache, the quick and sharp pulse, these symptoms, so generally noticed, where the premonitory stage is recognized, show very conclusively, that the first obvious morbid effects of the cause of cholera is derangement of the gastric and intestinal functions. This primary irritable and deranged state of the alimentary canal is more or less speedily followed by a rapid sinking and apparently total loss of the vital energy of the nerves subservient to the functions of organic life. The functions of the liver and kidneys are wholly suspended; the lungs cease to exert their appropriate vital influence on the blood and inspired air; the vital actions, by which animal heat is developed, are almost wholly arrested—in short, the whole machinery of *organic* life is tending, rapidly, to a state of total inaction, as if from palsy; whilst the organs subservient to the animal functions—the intellectual, the sensorial, and locomotive powers are in general but slightly affected. The very thick and dark state of the blood, depends on the rapid and almost total loss of its serum, by the relaxed exhalents of the alimentary canal and skin, and partly also, on the retention of the recrementitious carbonaceous matter, in consequence of the suspension of the pulmonary and hepatic functions. Dr. Jackson, of Philadelphia, rejects the opinion, that the feebleness or suspension of the organic functions—the weakened state of the heart, and the functional torpor of the liver, lungs, kidneys, &c., depend on a loss of power in the ganglionic system of nerves. “The facts of the disease,” he says, “give no countenance to this supposition. The insufficiency of this explanation is palpable, and we must resort to the more direct, obvious, and quite adequate cause, found in the exhaustion and alteration of the circulating fluids by the excessive evacuations from the stomach, bowels and skin.” The blood, he says, is speedily deprived of nearly the whole of its serous and saline portion. “It is then no longer sufficient in quantity to fill up the vascular and aneal apparatus. Shrinking and shrivelling, first of the remoter tissues, capillaries and vessels, ensue; the blood no longer filling the caliber of the arteries, the pulse disappears, and the heart, losing its accustomed stimulation, acts with diminished energy.” In consequence of this condition of the blood and the heart, he thinks the lungs, the liver, and the kidneys, cease to perform their functions. This explanation is indeed sufficiently direct and obvious, but I doubt much, whether it will be deemed quite adequate. If the diminished quantity and changed state of the blood were the sole cause of the functional torpor of the excretory organs and heart, how is it, that the voluntary muscles, the organs of

sense, and the brain continue to act with no remarkable reduction of power, even after the pulse is extinct in the extremities? Can it be presumed, that the morbid condition of the blood would thus prostrate the powers of the heart, lungs, liver and kidneys, and yet, at the same time, permit the brain and muscular system to act with nearly their ordinary vigor? It should be observed, too, that in some instances, the attack of the disease is so sudden and vehement, that the pulse ceases in the extremities at the very commencement of the attack, and before the discharges from the stomach, bowels, and skin can have drained the blood vessels of their serum. It is certainly a very remarkable circumstance, that the organs supplied with cerebral or spinal nerves, should be, comparatively, so little affected, whilst those supplied by the ganglionic or sympathetic system of nerves, are so deeply implicated in the malady.

*Cause.*—Whatever may be the nature of the remote or specific cause of cholera, it is manifest that all individuals are not equally susceptible of its deleterious influence. The natural or constitutional predisposition to disease consists, probably, in a naturally delicate and irritable state of the mucous membrane of the alimentary canal—a condition which may have shown itself, on a former occasion, in a peculiar liability to disorders of the stomach and bowels, from slight causes, or by habitual tendency to diarrhœa and dyspepsia. An excitable and easily subdued nervous system may also be regarded as constituting an aptitude to the influence of the cause of cholera. In individuals of this habit, the depressing effects of fear and terror must be peculiarly apt to give force to the cause of this disease. Among the accidental causes of increased predisposition to cholera, the following are regarded as the most detrimental. Poverty and its too frequent concomitants, filth and mental depression, together with deficient and crude aliment, have in all countries, and in all ages, co-operated most powerfully with epidemic causes in multiplying their victims. The broken down in constitution—the habitually intemperate, and the dissolute, have every where been the first and most certain sufferers. Exposure to a cold and humid atmosphere, particularly at night; excessive fatigue of the body; inordinate mental excitement—the abuse of spirituous liquors—and crude, indigestible, and irritating articles of food, are particularly calculated to favor the development of cholera, in persons exposed to the influence of its cause. The articles of diet which have been found most injurious in this respect, are, salt pork, warm pastry, spawn of fish, hard-boiled eggs, smoked meats and fish, melons and cucumbers, lettuce, radishes, cheese, sausages, raisins and nuts. Every thing, in short, which has a tendency to irritate the stomach, or which requires strong digestive powers, ought to be carefully avoided during the approach or prevalence of this epidemic. Excess in eating, whatever may be the nature of the diet, may give efficiency to the remote cause of the disease. Protection from the cool and damp night air, and from atmospheric inclemencies and vicissitudes, by good lodging and warm comfortable clothing—cleanliness, fresh air, the avoidance of excess in diet and drink—a cheerful, confident, and equable state of mind—the absence of inordinate personal fear, with a simple, nutritious, and digestible diet—these advantages will

go far towards protecting the system from the deleterious influence of the epidemic cause.

What is the nature of that deleterious principle which gives rise to cholera? Upon this subject all inquiries have hitherto resulted in little else than vague conjecture. Some ascribe this malady to an ærial poison, generated by the decomposition of vegetable and animal matter. This opinion is met with the objections, that the disease has prevailed at all seasons, in winter as well as in summer, and in localities where the materials for such miasmata were, to all appearances, too sparingly present for the production of an epidemic. Others have supposed the choleric cause consists of a poisonous air or effluvium, engendered deep beneath the surface of the earth, by a slow process of decomposition or chemical change in some mineral strata, or by central volcanic action. There is certainly something very analagous between the effects of the choleric cause, and those which result from mineral poisons, particularly arsenic. The slow progress of the disease for the period of more than seventeen years, in a broad zone over the surface of the earth, often in opposition to the regular currents of the wind, seems to accord well with what one might suppose would be the progress of an epidemic if it depended on a subterranean cause of this kind.

There are some who are disposed to believe, that the cause depends upon some occult modification in the constitution of the atmosphere itself. But this opinion is met by the objection, that, if such were its origin, it could hardly have advanced in a direction contrary to the prevailing current of the air, or winds—a circumstance which has frequently been observed. A few writers contend, that the disease depends on a deficiency of the electric fluid in the atmosphere, whereby the animal system is deprived of its most subtle and pervading stimulus, and the organic affections debilitated. The disease has, also, been ascribed to the influence upon the human system, of some change in the magnetic condition of the earth; and Hahneman, with a few other writers, has adopted the Linnean doctrine, of animalcular origin. It is maintained by the advocates of this hypothesis, that cholera arises from an infinite number of animalculæ, too small to be perceived by the most powerful microscope, which, floating in the atmosphere, enter into the lungs, and alimentary canal, and thence make their way into current of the circulation. This opinion is ingeniously and zealously defended by Dr. Neal, in a late work, written expressly to illustrate this view of the subject.

It is unnecessary here, to enter into a discussion upon the various points involved in these opinions. It may be sufficient to observe that they are all, as yet, wholly conjectural; and that, the experience and observation of the profession, though intently directed to this object, have, hitherto, failed in establishing any thing on the subject which can be regarded as possessing any considerable degree of probability.

Does the human body laboring under cholera, engender a poison, which, when brought to act on a healthy individual, will give rise to the same distemper; in other words, is the disease communicated from the sick to the healthy in the manner of a contagion? This is an important question. The fatality, and calamitous consequences of epidemics, are



always greatly augmented, by the conviction among the people that the reigning disease is contagious. Besides the unhappy effects on the minds of the people, the vexatious and often ruinous sanitary restrictions and quarantines, to which the existence, of contagion usually leads, are in themselves evils of very great magnitude, and never fail to augment both public and private distress. Where the evidence of contagion is so slight, therefore, that the most careful and judicious observers are led to entertain strong doubts of its existence, it is manifestly the duty of those whose station gives them an influence over public opinion, to discourage the belief in the prevalence of contagion. If the authority of those who have witnessed epidemic cholera is to be taken as an evidence on this point, the foundation for the opinion of its contagious character is but very slight. It is stated that in India, ninety-nine out of one hundred physicians believe that cholera is *not* contagious; and in every country and district that has been invaded by this disease, a great majority of the most experienced and enlightened of the profession entertain the same conviction. In many populous cities and districts, as at Moscow, Orenburg, and Paris, the majority of medical men, as well as of citizens, did not doubt the contagious character of the disease while they contemplated it at a distance; but after it had made its appearance amongst them, and they were furnished with an opportunity of observing for themselves, the belief in its contagiousness was almost universally abandoned. The quarantine regulations and sanitary restrictions which were enforced with the utmost vigilance and rigor at London, Paris, Hamburg, and other places, when the disease first broke out, were, on further experience and inquiry, so greatly relaxed as to demonstrate, in the clearest manner, the change of sentiment which took place under the light of experience, in relation to this point. There is not, I am persuaded, a single *unequivocal* instance on record, of the direct communication of this malady from the sick to the healthy. It is true that many *apparent* examples of this kind, have been adduced, but these have always been attended with circumstances of doubt and uncertainty; whilst on the other hand, innumerable instances have been noticed, wholly inconsistent with the supposition of contagion. Were some one of the unequivocally contagious diseases—were small-pox, for instance, now, for the first time to appear amongst us, can it be imagined, that after an almost universal prevalence, during a period of more than seventeen years, the contagious character of the disease would not have been incontestibly established? In the report of the extraordinary committee of health, at Moscow, it is stated “that in the opening of bodies of persons who had died of cholera, to the minute inspection of which four or five hours a day, for nearly a month, were devoted, neither those who attended at the operations, nor any of the assisting physicians, nor any attendants, caught the infection, although with the exception of the first day scarcely any precautions were used.” In the cholera hospital of this city, (Cincinnati,) in which, during a period of nearly five weeks, there were constantly from fifteen to twenty cholera patients, not a single case of the disease occurred among the attending physicians, nurses, and other attendants, although some of these remained in the wards, day and night, during the whole period, and frequently slept on beds, in

which cholera patients had lain and died. Dr. Walker, speaking of the disease as it prevailed at Moscow, says, that "persons had put on the clothes of patients who were very ill, or who had died of cholera—had lain in their beds, and even along side of dead bodies—had bathed in the same water where very bad cholera patients had been bathed just before, and that notwithstanding not one of these individuals was attacked with the disease." Without pursuing this subject any further, it may, I think, be safely asserted, that the cause of cholera was, originally, and still continues, to be generated by circumstances foreign to the human body; and that it is propagated by being diffused throughout the atmosphere.

*Treatment.*—No disease has ever pervaded this country, that spread before it such universal terror and dismay, as the one now under notice. The rapidity of its progress towards a fatal termination, justly won for itself such a reputation that people fled from its approach with horror and consternation. Doctors met it in its advance with the hope to learn something of the features, of its peculiarity and the outlines of treatment, that they might be the better qualified to afford assistance when it arrived within the limits of their own practice. Nor will it be denied that the best men with the best of motives have combatted valiently, in the front ranks of the regular profession, against this wide spread and formidable pestilence—a pestilence "that walketh in darkness and wasteth at mid-day," committing such indiscriminate havoc in every kingdom upon the earth. The sincerity of their motives, we say, must not be impeached when we see them, in many instances, falling a sacrifice to their own ambition, in their efforts to relieve suffering humanity; and if the success of their practice has not been equal to their deserts, the fault must be charged to education and the means they employed rather than wrong motives—to their ignorance rather than knowledge.

The writer of this article, in detailing the treatment of this most distressing and frightful malady, can give the result of his own observation and experience during its ravages in New York in 1834, at which time he was a practitioner, from the office of Dr. Dodge Sweet.

In the inception of the malady, when the patient complains of irregular appetite, disordered digestion, a sense of fulness, or uncomfortable feeling in the region of the stomach, unusual heat in the bowels accompanied by a noise and commotion, diarrhœa, or a peculiar feeling as if a diarrhœa would on the slightest cause come on, No. 6 and composition must be speedily resorted to, or the compound recommended under the head of cholera preventive, (see recipe in last chapter on cholera-morbus,) which will invariably, with a proper regulated diet, correct the intestinal and hepatic (liver) secretions, and allay the vascular and nervous irritation of the alimentary canal, and thereby restore the harmony of the digestive functions. By this timely mode of management, the premonitory or incipient indications of the disease, have uniformly been speedily and effectually subdued.

But when the disorder has assumed a more serious character, the pulse at the wrist irregular, or hardly perceptible, the evacuations put on the appearance of *rice-water*, the patient experiences cramps and

coldness in the extremities, rigors, vomiting, purging and that peculiarity of the fingers, which look as if they had been *par-boiled*, supervene, and with all, when there is a paucity of urine, remedial measures of the first importance must be put in operation without delay; for it must be kept in mind at *this* stage of the disease, without them, termination of life cannot be far distant. The physician and attendants must not now be idle. The third preparation should be given in wine-glass doses, and repeated every ten or fifteen minutes; the cholera preventive, and No. 6, should also be given without limitation. Enemas must be repeated every fifteen or twenty minutes, composed of cayenne pulverized, one tea-spoonful, and an equal quantity of composition, and one pint tepid water. Hot bricks, or rocks, (wrapt in wet cloth,) should be applied to the feet, legs and sides, and the muscles or parts that are cramped should be constantly rubbed with hot, dry flannels, and the patient kept in as warm a place and condition as possible. This practice must be persevered in until a reaction, or an improved condition of the patient indicates the attainment of our object. If the patient can be made to vomit freely—if a due degree of warmth and perspiration can be re-established upon the surface, the cramps subdued, and the pulse comes up, so far, certainly, our object is accomplished, although the patient may not be free from danger. After these extremely harassing symptoms have subsided, the patient should be suffered to obey now his inclination and take some repose. If that livid and corrugated appearance of the hands and feet have disappeared, circulation of the capillary system becomes active, full and healthy, and the whole body perfectly warm, but little need be done further than to regulate the diet, and repeat at suitable intervals, the composition, No. 6, and cholera preventive, and perhaps occasionally an emetic. For common drink, (as the patient is harassed with constant thirst,) any of the mint teas may be made and drank freely, when cold, or even cold water to any extent, provided it is spiced a little with ginger or cayenne pepper, or even a little good brandy.

Again we may suppose a state of collapse has supervened before the patient is seen; our treatment in this stage of the complaint cannot essentially vary from that recommended above, and it should be promptly and energetically adapted; at the same time frictions with hot, dry flannels should be constantly applied to the whole surface. The permanency and beneficial effects of this practice in cholera, cannot be doubted. Dr. Sweet, before referred to, during the months of August and September, in 1834, had sixty-three well developed cases of cholera, and lost but two; and the death of these were directly attributable to the repeated doses of laudanum they had taken previous to treatment similar to the above being advised. Ought not the remedies on which the strongest dependence is placed, by the regular practitioners, in the management of cholera, when by their own reports, they cannot cure more than three out of seven, hereafter, ever to be held in *disgrace*!

## DIARRHŒA.

DIARRHŒA is an affection of the bowels, the characteristic symptoms of which are : frequent and usually copious liquid stools of a feculent character—attended with more or less griping without tenesmus, and generally without febrile irritation.

The proximate cause of diarrhœa consists, according to the sentiments of Cullen and some other writers, in increased peristaltic motion of the intestinal tube. Unquestionably, an inordinate peristaltic action does take place in this affection ; but this increased action does not constitute the essential pathological condition of the disease, and cannot therefore be properly regarded as its proximate cause. Increased action of the intestinal canal may arise in two ways, namely : 1. The irritability of the bowels may be in a natural state, whilst the substances which are brought to act on them are of a peculiarly irritating or exciting character. In this case the alvine discharges will generally cease soon after the irritating substances which have excited them are expelled, or their activity is destroyed—as is the case with the purging produced by cathartics, or the action of other transient irritants. 2. The irritability of the bowels may be preternaturally increased ; in which case the ordinary secretions and contents of the intestinal canal, and even the mildest substances, will produce excessive peristaltic action, and of course frequent alvine discharges.

*Irritation* of the mucous membrane of the bowels, therefore, constitutes the primary morbid condition in diarrhœa, of which increased peristaltic motion and the inordinate alvine evacuations are the consequences. When the diarrhœa continues long, or assumes a chronic form, the mucous irritation becomes fixed, and unless it be counteracted by an appropriate treatment, gradually passes into a state of chronic inflammation—more especially of the mucous membrane of the colon, and finally terminates in ulceration, and other forms of disorganization of this membrane. Broussias observes that when diarrhœa continues beyond the thirtieth day, it is almost invariably connected with organic derangement of the mucous membrane of the colon. When the disease continues until the irritation passes successively into chronic inflammation and disorganization of the mucous tissue of the bowels, slight febrile irritation occurs—particularly towards evening, and a few hours after eating ; the pulse becomes quick, small and frequent ; the skin dry and harsh ; the body emaciates more or less rapidly ; and at last œdema of the feet and legs, and occasionally dropsical effusion into the cavity of the abdomen ensue. In this aggravated form, the patient is apt to experience extremely severe colic pains an hour or two after taking food, and in general even the mildest ingesta are followed by tormina, flatulency, and diarrhœal discharges, and articles of food are sometimes passed in the stools in an imperfectly digested state. The appetite is generally very variable and capricious ; being sometimes voracious, and at others entirely depressed. The stools too vary much both in relation to frequency and appearance. They are sometimes slimy, mixed with more or less fecal matter ; at others abundant and watery—occasionally dark, reddish, or whitish, and often contain small portions of undigested food.



On post mortem examination of subjects who have died from chronic diarrhœa, or from some other disease accompanied with this bowel affection, we sometimes discover irregular patches of a fungoid appearance and of a livid or dark red color, slightly elevated above the surrounding parts, on the mucous membrane of some portion of the intestinal canal. In other instances, small well-defined ulcers with elevated edges, or extensive irregular ulcerations with ragged edges, are met with. Not unfrequently the coats of the intestines are thickened at the parts where these ulcers are situated; and in some instances this thickening is so great as to diminish the area of the intestinal tube very considerably. In cases of this kind, says Broussais, the usual diarrhœal symptoms are apt to alternate with attacks of costiveness and death occasionally occurs under symptoms resembling those of ileus. Sometimes, instead of ulcers, the mucous membrane is covered with numerous tuberculous elevations of different sizes; and occasionally extensive portions of this membrane are found covered with smooth cicatrices of ulcerations which have healed. Broussais observes that these ulcerations are always found most numerous in the cœcum, and about the lower portion of the colon. He thinks, and with great probability indeed, that when the feculent matters become fetid and putrid, whether from long retention or imperfect digestion, they cause irritation, and ultimately inflammation in that part of the mucous membrane where they are most apt to become accumulated. When death occurs at an earlier period of diarrhœa, the mucous membrane of the colon, and of the ileum is usually found in a more or less reddened or injected state, with slight thickening of its structure. This is particularly observed in those chronic diseases which during the latter period of their course are accompanied with colliquative diarrhœa. In the chronic diarrhœa of children, attending what is usually called marasmus, I have found in several instances on dissection the mucous membrane of the lower portion of the small intestines and of the colon, exhibiting extensive tracks of a congeries of minutely injected vessels.

*Causes.*—The remote or occasional causes of diarrhœa are exceedingly various. They may be divided into those which act directly on the mucous membrane of the intestinal canal; and those which act indirectly through the medium of the general system. Of the former kind are all irritating substances received into, or generated in the alimentary canal; and of these the most common are: irritating and indigestible articles of food and drink; acrid and vitiated secretions from the liver and intestinal exhalents; worms; acid generated in the bowels; fresh fruit, particularly such as are very sweet, or acid, &c. Limestone water is particularly apt to give rise to copious diarrhœa in those who have not been accustomed to its use; and new made cider, before it has undergone the fermentative process, is also extremely apt to excite this affection. Much, however, depends on the previous or habitual state of the irritability of the intestinal canal, with regard to the power of different articles to excite this affection. Some individuals, apparently in a state of good health, cannot take particular articles of diet or drink without suffering more or less from griping and diarrhœa; whilst in others no unpleasant effect whatever will result from the same articles. Idiosyncrasy (a peculiar habit of the body) also appears occasionally to be concern-

ed in the production of this affection by causes of this kind. Thus in some persons, fresh milk almost invariably excites diarrhœal discharges; and I know an individual who generally becomes affected with diarrhœa when he eats fresh oysters. Diarrhœa produced by causes of this kind is, however, almost always of temporary duration, and depends on simple irritation, which generally readily subsides after the offending matter has been discharged, and other exciting causes do not supervene. Nevertheless, if the bowels have previously been in an irritable condition, or the patient be laboring under some organic visceral affection, instances which commence from such local irritating causes are apt to continue, and unless particular attention be paid to a careful avoidance of the further influence of the exciting causes of this affection, to give rise to high irritation, inflammation, and finally ulceration in some portion of the intestinal canal.

Among the causes of diarrhœa that affect the alimentary canal through the medium of the general system, *cold*, particularly when applied in a humid way to the feet or abdomen, is one of the most common and powerful. Cases of this kind are most apt to occur during damp and variable weather, and the evacuations are generally very liquid or watery. Slight rheumatic or catarrhal symptoms are apt to accompany the disease—such as toothache, transient pains in the extremities, short cough and coryza, together with slight febrile irritation, towards evening, attended with a dry mouth and great thirst. The tormina are usually exceedingly severe. The occurrence of diarrhœa from cold, or the conjoined agency of humidity and cold, depends, no doubt, on the centripetal direction given to the circulation; in consequence of which the liver and capillaries of the mucous membrane of the bowels become engorged with blood, giving rise to a vitiated or perhaps a superabundant secretion of bile and intestinal mucus, at the same time that the irritability of the bowels is morbidly increased.

Diarrhœa appears also sometimes to arise from an epidemic condition of the atmosphere, independent of thermometrical or hygrometrical states. This variety of the disease usually occurs in the autumn, when the nights begin to be cool, after a very dry and hot summer, and generally during the prevalence of other forms of intestinal diseases—particularly dysentery and cholera. Cases that proceed from causes of this kind are commonly preceded by the same train of premonitory symptoms that usher in miasmatic fevers—such as a feeling of weight and anxiety in the precordia, loss of appetite, bitter taste, tension and fulness of the abdomen, disturbed sleep, headache, some lassitude and aching pain in the back, and slight sensations of creeping chilliness. Diarrhœa arising from this cause frequently passes into a dysenteric form of the disease. It is probable that these cases depend on the conjoined influence of koino-miasmata and atmospheric vicissitudes—giving rise to increased irritability, functional disorder, and sanguineous engorgement of the liver and intestinal canal, in a way which will be more particularly referred to under the head of cholera. Besides these, there are many other general causes capable of producing violent and protracted diarrhœa. The repercussion of acute and chronic cutaneous eruptions sometimes gives rise to obstinate attacks of this disease. It may also

be produced by violent affections of the mind, particularly sudden terror and grief. Diarrhœa occurs very frequently in visceral and other local affections attended with suppuration and ulcerative disorganization. Thus in the latter period of pulmonary consumption, colliquative diarrhœa almost invariably occurs; and the same may indeed be said of every variety of disease attended with hectic fever, or extensive suppurations.

In febrile diseases, diarrhœa sometimes occurs as a critical evacuation. It can never be regarded as salutary, however, where it depends on the supervention of phlogosis, or high vascular irritation of the mucous membrane of the bowels. When the discharge is watery, reddish, or muddy, mixed with flocculi of mucus, and the abdomen is tender and the tongue dry and red along the edges, it always indicates an aggravated condition of the disease, and the existence of mucous inflammation, and is of course a highly unfavorable occurrence. Critical diarrhœa appears generally to depend on a copious secretion of bile, or an increased discharge from the intestinal exhalents, co-operating, probably, with a morbid irritability of the bowels; and hence, salutary discharges of this kind are almost invariably bilious, mixed with more or less feculent matter and intestinal mucus. Watery discharges, free from bile, are rarely if ever indicative of a favorable tendency of the disease. During dentition, children are very liable to diarrhœa; but as this discharge, when moderate and unaccompanied with much gastro-enteric irritation, is calculated to lessen the tendency to pretermatural determinations to the brain, it should not be checked in instances of this kind, unless it becomes excessive and very exhausting.

When the diarrhœal discharge has been brought on by indigestible or irritating articles of food or drink, and consists principally of feculent matter and vitiated secretions, it may in general be readily checked, and unless greatly mismanaged, will rarely assume a dangerous character. In general, diarrhœa is most apt to assume a chronic and dangerous character when it arises from the influence of cold and damp air, or from the habitual use of unwholesome and indigestible diet, in individuals laboring under some chronic visceral affection, or whose general health has been much impaired by previous diseases, hardships, or a course of intemperate living. When we find the disease to continue long, with frequent, watery, and acrid discharges attended with tenderness in the abdomen to firm pressure, and extremely severe tormina, we may presume that there exists chronic inflammation, or at least high irritation in the mucous membrane of some portion of the bowels—and consequently that there is much danger of the occurrence of structural disorder in this tissue, if the disease be not soon removed by appropriate measures. Those cases of diarrhœa that assume a strictly chronic character, and in which scanty and painful diarrhœal evacuation of an unnatural appearance occasionally alternate with short periods of constipation, and severe pains are experienced in the track of the colon an hour or two after eating, may be regarded as certainly dependent on mucous inflammation, and most probably attended with more or less ulceration, and consequently with great danger and difficulty in effecting a cure.

Diarrhœa from the irritation of dentition, as has just been remarked,

is rather a salutary than a dangerous affection; but when this *symptom* of enteric disease is accompanied with a pale and fretful expression of the countenance, a hard and tumid abdomen, frequent picking at the nose, voracious appetite, and the discharge of undigested portions of food in the stools, it must be considered as an affection of a more serious import.

*Treatment.*—In the treatment of diarrhœa it should always be recollected that the characteristic alvine discharges, by which this affection is recognized, and from which its name has been derived, *is a mere symptom of a primary intestinal disorder*, and that our remedies must be especially directed against this, the essential malady.

The principal indications in this form of intestinal disease, therefore, are, 1. To remove as much as possible every source of intestinal irritation; 2. To allay the morbid irritability of the mucous membrane of the bowels; and 3. To diminish the determination of the blood to the vessels of the intestinal canal.

In recent cases where there is reason to presume that the intestinal irritation is kept up by vitiated secretions, or other irritating matters lodged in the bowels, recourse must be had to mild purgatives. This is especially necessary where diarrhœa is the consequence of indigestion, or of the reception into the stomach of indigestible and irritating articles of food; or where the bowels are loaded with fecal matter, as occurs in the marasmus of children. It must be observed, however, that it is only in the earlier periods of diarrhœa, or where the mucous irritation has not passed into the state of *inflammation*, that any material advantage may in general be obtained from purgatives. Purgatives are, indeed, very often greatly abused in affections of this kind. Nothing is more common than the repeated use of active purgatives in diarrhœa. An individual becomes affected with looseness of the bowels. If it does not soon cease spontaneously, he takes a purge. The bowel complaint, however, continues, and convinces him that there is still something left which must be removed. To make himself sure of his objects, he takes a more active dose; but the tormina and discharges instead of being mitigated, acquire greater violence. Astonished at the obstinacy with which the offending matter sticks to the bowels, he determines, once and for all, to get rid of the cause of his complaint, and swallows a double dose of the most active cathartic. He now begins to experience tenderness in the abdomen; the tormina and diarrhœa discharges continue; in short, he has developed inflammation, which the most judicious management may alone be capable of removing.

In taking a careful view of this subject, we are rather inclined to prefer injections to any, or particularly to a *free* use of cathartics. If any are given, the gentlest laxatives alone should be employed.

In all bowel affections attended with inordinate discharges, a preternatural determination of blood takes place to the vessels of the intestines, with more or less torpor of the cutaneous exhalents. This is more especially the case in instances of long standing, and contributes very materially to the support of the intestinal irritation. Remedies which are calculated to counteract this centripetal direction of the humors, are therefore especially proper in affections of this kind.



No remedy possesses such essential importance to accomplish this purpose, or no combined operation so appropriate as the vapor bath and the lobelia emetics. A greater change is put on by its administration, in twenty-four hours, than could possibly be wrought by any other course in quadruple that time. In cases of diarrhœa, characterized by a chronic inflammation of the intestines, the adoption of this treatment cannot be too strongly urged by the practitioner in the outset. This practice equalizes circulation, by restoring a healthy action to the capillary vessels upon the surface, excites activity in the cutaneous exhalents, and thereby takes off that determination and pressure upon the bowels. And, further, a lobelia emetic will not fail to procure a favorable change in the secretions of the liver, which may be suffering any temporary embarrassment. Injections should also be frequently repeated. Composition may be used alone, or combined with nerve powder and slippery elm.

A preparation compounded after the following formula, has long been given with great effect in dysenteric affections: Poplar, four ounces; bayberry and high brier root, each six ounces; cranesbill and hemlock, gum myrrh, pulverized, and fennel seed, each two ounces; peach meats, four ounces; caraway seed and cinnamon, pulverized, one ounce. The whole should be put to six quarts of water, and steeped five or six hours—then to be strained and reduced to four quarts. Then add five pounds of loaf-sugar, and three pints French brandy.

A table-spoonful would probably be a suitable dose for an adult, repeated according to circumstances; or if this preparation is not at hand, the bayberry, cranesbill (better known at the south by the name of alum root,) and the high brier root, (that which grows so plentifully by every way-side and hedge, and yields such a delicious black berry,) may be either prepared combined or separate, and given to great advantage in this affection.

Some practitioners whose practical observation and experience, certainly entitles their opinion to respect, think the strong compound recommended in the treatment of cholera, is unrivaled in its efficacy in this complaint also.

## CHRONIC DISEASES OF THE URINARY ORGANS.

## DIABETES MELLITUS.

DIABETES was known to the ancient Roman physicians, but it does not appear that they had any knowledge of the essential characteristic of the disease—namely, the saccharine character of the urine. They seemed to have considered the disease only as a rapid discharge, by the kidneys, of whatever drinks were taken into the stomach, without having undergone any changes by the digestive or assimilative functions. Celsus, too, says diabetes consists in a greater discharge of urine than there are fluids taken in by the mouth; and Aretæus, who has given an accurate description of the course and phenomena of this disease, defines it in the same way. The saccharine character of the urine in diabetes, was not known or pointed out, until Willis directed the attention of the profession to it; and although this morbid condition of the urine is unquestionably the essential characteristic of diabetes, it has frequently been wholly left out of view in the definitions which have been given of this disease. Cullen himself has fallen into this error in his definition of this malady. “It consists,” he says, “in the voiding of a preternatural quantity of urine;” and in thus neglecting to notice the characteristic quality of the urine, he confounds it with diseases which are radically distinct from it, and which resemble it only in the circumstance of an unusually large flow of urine. There are at least three varieties of urinary disease, which are accompanied with a preternatural flow of urine, but which are nevertheless essentially distinct, as well from each other, as from the disease now under consideration.

By diabetes, then, is meant that form of urinary disease, in which the urine is *sensibly impregnated with saccharine matter, and voided in an unusually large quantity, being attended with great thirst, voracious appetite, and an obstinately dry and harsh skin.*

Diabetes, usually, makes its appearance in a very gradual manner, although in some instances it comes on suddenly, with slight chills and febrile commotions. When its invasion is gradual, it is generally attended from the first with various indications of a disordered state of the digestive organs—such as variable appetite, acid eructations, occasional nausea, and vomiting.

The quantity of urine discharged in this affection, is almost always extremely great; and in some instances truly enormous. Cases are reported in which, from twelve to fifteen pints of urine have been discharged daily for several weeks. That such a drain from the system must cause great and rapid exhaustion and wasting of the body may be readily conceived; and, indeed, the utmost degree of prostration and emaciation never fail to ensue as the disease advances in its course.

The urine in this disease is generally of a pale straw-color, approach-

ing sometimes to a shade of green. Its smell is usually faint, resembling that of milk, or according to some, that of fresh animal broths; and its taste is more or less sweet, from the sugar which it contains. Diabetic urine always contains very little or no urea, and in most instances it is entirely destitute of liliic acid. It enters very slowly into putrefactive decomposition, but passes readily into the acetous or vinous fermentation. In these circumstances it differs very essentially from the urine of other varieties of disease resembling diabetes—in which latter it always putrefies with great rapidity, and becomes exceedingly fetid.

*Symptoms.*—The constitutional symptoms which attend this disease, are—very urgent thirst; craving appetite; dry skin; a distressing sense of weight and uneasiness in the stomach after taking food; dry and parched mouth; white, foul, sometimes clean and red tongue; wasting of the flesh; a feeling of languor and aversion to exercise; debility; pain and weakness in the loins; irregular action of the bowels, being most commonly costive; some degree of inflammation and pain about the prepuce and glans penis, and especially about the external orifice of the urethra; loss of virility; cold feet, with a tendency to unfreezing in the latter period of the disease; dull and aching eyes; indistinct vision with vertigo; headache; and difficulty of breathing. As the disease gains violence, and draws towards the fatal termination, the gums become spongy and the breath fetid or disagreeable, and the voice rough, or extremely weak and whispering. The emaciation and exhaustion proceed with great rapidity towards the conclusion, and the patient finally sinks into a state of somnolency or drowsiness, from which it is often extremely difficult to keep him roused even for a moment. In general the pulse is but little or not at all accelerated in the early periods of the complaint; and in many instances it is even less frequent than in health. In the advanced stage of the disease, however, when the emaciation and exhaustion are very great, it is not uncommon to find the pulse very frequent and quick. In some instances the blood has been found sizzly, or covered with a thick inflammatory crust. Home states, that the blood of one of his diabetic patients manifested a highly inflammatory character, although the pulse was rather below the regular standard in frequency and strength. It is by no means unusual for this disease to terminate in apoplexy—a circumstance somewhat remarkable, when we consider the exhausted and worn down condition of the system in the last period of the disease.

The duration of diabetes is extremely various. In some instances, not more than four or five weeks intervene between the commencement and the fatal termination of the disease; whilst the majority of cases are protracted to several months, and occasionally to as many years. In some instances considerable remissions occur in the progress of the malady; and cases are mentioned, in which the diabetic symptoms recurred in a strictly periodical manner, with perfect intermissions of longer or shorter duration.

In some individuals there appears to exist a natural or constitutional predisposition to this disease; and there are many instances on record, which go to prove that this predisposition is sometimes hereditary.

Mr. Venables has recently directed the attention of the profession to the diabetic affections of children. He thinks that many of the cases that are considered as instances of marasmus, rickets, &c., are intimately connected with morbid and excessive urinary secretions. Several cases of gradual wasting, attended with great thirst and voracious appetite, came under his notice, which he ultimately ascertained to be wholly dependent on diabetic affections. Infantile diabetes, says Mr. Venables, seldom appears till after the child has been weaned. The child, when the disease comes on, will lose its usual flow of spirits, and manifest an obvious state of general indisposition. After some time, it begins to waste in flesh—the skin becoming, by degrees, harsh, dry, and flabby, and very warm. In the early stage of the disease, the bowels are regular, and little or no deviation from the natural and healthy appearance of the alvine discharges is to be noticed. The tongue also, at the beginning, indicates no symptom of disease. After the disease has made some progress, the bowels become disordered, and the alvine evacuations are unnatural—being sometimes greenish, at others dark, and mixed with bile. At a still more advanced stage, the abdomen becomes distended and tense, similar to what occurs in chronic enteritis or marasmus. The pulse is usually accelerated from the commencement, and soon becomes small, tense, and wiry. The most remarkable symptom, however, although it frequently escapes observation, is the inordinate discharge of urine. This discharge increases in quantity so gradually that it is not usually noticed. By the time it has become more remarkable, great thirst prevails. In the advanced stage of the complaint, the brain often becomes more or less affected. Headache, vertigo, and temporary delirium, occasionally occur, and when it proves fatal, the patient dies comatose, or apoplectic. The skin is always extremely dry and harsh to the touch; and in general, considerable fever attends during the advanced periods; and this fever is almost invariably of a remitting form. In cases that continue a long time, anasarca, and even general dropsy, sometimes supervene.

This is a condensed abstract of the phenomena of this affection, as given by Mr. Venables. That children may become affected with diabetes, cannot be doubted; but there is reason for suspecting, that in the disease just described, the diabetic symptoms are *symptomatic* of gastrointestinal irritation. In his post mortem examinations, Mr. Venables confines himself to the phenomena presented by the urinary organs, a restriction which is much to be regretted.

*Of the exciting causes* of diabetes our knowledge is as yet but very limited and unsatisfactory. It would appear from the observation of some writers, that males are more subject to the disease than females. According to Rollo, those whose digestive organs are usually active, and who indulge freely in the pleasures of the table, are most liable to this malady. The free and habitual use of condiments, and of vegetable articles of diet, especially the farinaceous substances, is said to favor the occurrence of this disease in an especial manner. Protracted grief; despondency; deep sorrow; chagrin; and a sense of great affliction, when favored by an exclusive vegetable, or by weak and imnutricious diet, have been known to give rise to diabetes. Sudden atmospheric



vicissitudes, more especially when attended with protracted humidity, are supposed also to be capable of giving rise to this disease. That the habitual or frequent use of diuretic and spirituous potations, should have a tendency to produce diabetes in persons who are naturally predisposed to it, can scarcely be doubted. It is probable, also, that renal calculi have sometimes produced this complaint. Upon this subject, however, all our sentiments are, as yet, in a great measure, conjectural; for the disease is frequently found to make its appearance without any assignable exciting cause whatever. Diabetes mellitus has been known to occur sympathetically from pregnancy. A very remarkable case of this kind is related in Dr. Osann's Clinical Reports. During five successive pregnancies, and throughout the whole of each period, the diabetic symptoms were very conspicuous. The quantity of urine discharged was exceedingly great, and on being analysed, it was found to contain no inconsiderable portion of saccharine matter. The thirst was extremely urgent, but the appetite and digestive powers remained regular, and rather active.

The opinions which have been expressed concerning the pathological character of diabetes, are very various and contradictory. According to the celebrated Mead, its primary seat is in the liver, and not in the kidneys. Some pathologists have ascribed it to spasm in the secretory organs, and placed it among the spasmodic diseases. Others attribute this disease to suppressed perspiration, in consequence of cold, or some other adequate cause. The most prevalent opinion on this subject, however, is that which ascribes the disease to a laxity of the kidneys, and to a debility of the urinary organs in general. Sydenham, Rollo, Cullen, and others, regarded this affection as depending primarily on a disordered state of the digestive organs, in conjunction with a defect in the assimilating functions. Home also entertained a similar idea concerning the pathology of this disease; he considered it as arising from a defect of the assimilatory process. Quite recently, Dr. Ayre has published some observations on this disease, from which it appears, that he considers it as depending wholly on chronic inflammation of the kidneys. Dr. Barry maintains, that the grand source of diabetes is to be looked for in the fluids; whilst Dr. Johnson is of opinion that it is a disease of the general system, or at least that its pathology cannot be fixed on any one particular organ; neither in the kidneys, the liver, the stomach, nor the lungs, exclusively.

Whatever may be the essential nature of diabetes, or the primary seat of the disease, it appears quite certain, that the proper functions of the kidneys are greatly deranged or perverted in this disease. That this is the case can admit of no doubt, when we advert to the circumstance, that, according to the experiments of Nicholas, Granville, and Woolaston, the serum of diabetic blood does not contain a particle of sugar. Its presence in the urine, can, therefore, arise only from a perverted secretory action of the kidneys; and whatever may be the immediate cause of the functional derangement of these glands, its existence must be regarded as the proximate cause of all the characteristic phenomena of the disease. Another pathological condition, though less demonstrable than the former, is, as I conceive, a peculiar state of the blood, which

may perhaps exist as the immediate cause of the perverted renal action. That the constituent elements of the blood are not such as they are wont to be in health, is rendered probable by the effects which different articles of aliment have, both on the saccharine quality, and on the quantity of the urine. If, by an exclusive use of animal diet, the secretion of urine becomes less copious, and its saccharine character disappears, the inference naturally is, that by this kind of food the elements of sugar are reduced in the blood, and consequently less abundantly combined by the perverted action of the kidneys. In health, there is always more or less *urea* secreted by the kidneys; but in diabetes, this peculiarly urinary compound is rarely formed in any appreciable quantity, and very often none at all. When we take into view the close chemical analogy which exists between this substance and sugar, it appears extremely probable that the *urea*, which is secreted in health, is, in diabetes, converted into sugar by the perverted action of the kidneys. According to the analysis of Prout, for instance, *urea* and sugar are composed of the following constituent elements:

| <i>Urea.</i>  | <i>Sugar.</i> |
|---------------|---------------|
| 6.5 hydrogen, | 6.5 hydrogen, |
| 20.5 carbon,  | 40.0 carbon,  |
| 26.5 oxygen,  | 54.0 oxygen,  |
| 46.5 azote,   | — azote.      |

Thus the absolute quantity of hydrogen in a given weight of sugar and of *urea* is precisely the same, while the quantities of carbon and oxygen of sugar are just double those of *urea*. From all this it would appear probable, that diabetic blood is deficient in azote, in consequence of which the kidneys are not furnished with a sufficient quantity of this element to form *urea*, of which it constitutes a large constituent part; and therefore sugar, which contains no azote, is the result of the renal action. This idea, first started I believe by Woolaston, is rendered still more probable by the effects which an exclusive animal diet has in reducing the quantity of sugar in the urine, and increasing the formation of *urea*; for the large proportion of azote which animal food furnishes to the blood, supplies this element in sufficient proportion for the formation of *urea* by the kidneys, in consequence of which the secretion of sugar is either much diminished or wholly arrested. From these observations it is probable, as I have already said, that the blood itself, in this disease, is defective in the regular proportions of its healthy constituent elements. But here we are necessarily led a step further in our inquiries into the pathology of this malady. What is it, namely, that causes this defective or innormal condition in the composition of the blood? We can think of but one cause, and that is, a defect in the digestive, but more especially of the assimilative functions of the system. Thus, then, it would appear that diabetes is a disease by no means local, or confined in its pathological state—but, on the contrary, one in which the digestive and assimilative functions, the state of the blood, and the particular functions of the kidneys, are all deeply and essentially implicated.

*Post mortem appearances.*—It is a singular circumstance, that the

lungs are almost universally found in a diseased condition in those who die of diabetes. Dr. Johnson declares, that so far as his inquiries go, there is not a single instance on record, where, on dissection, pulmonic disease was not discovered in persons who had sunk under this disease.

The kidneys frequently exhibit an increased vascularity; and many writers state, that these organs are often enlarged, soft, flabby, and otherwise diseased. Some traces of disease are also sometimes discovered in the mesenteric glands, in the lacteals, and in the mucous membrane of the alimentary canal. The bladder also, sometimes exhibits a morbid condition, being considerably contracted, with its coats much thickened and indurated.

The fat within the thorax, abdomen, and pelvis, in some instances, has seemed entirely converted into a gelatinous-like matter, somewhat of an amber color, and when slightly pressed between the fingers, did not appear unctuous. The subcutaneous fat is found in general much diminished.

Great abatement of the thirst, and extraordinary desire for food, the skin becoming soft to the touch and perspirable, the bowels more lax or regular, the urine being voided less frequently, and in smaller quantity each succeeding day, being at the same time of a more natural color, taste, and smell, the dyspeptic affection being much diminished, and the bodily strength somewhat recruited, together with a return of mental energy, are to be regarded as very favorable symptoms; whereas the contrary denote a fatal termination sooner or later.

*Treatment.*—It is very evident, that, whatever be the definite pathology of this disease, the skin, as an extensive outlet, sympathizing powerfully with almost all the glandular viscera, is an important agent in its removal. Attention to this fact should never be overlooked in our remediate measures. The combination, therefore, of the vapor bath, the cold water dash, a highly pungent stimulating lotion, and the application of friction, will be very useful in exciting the action of the skin in diabetes.

The influence of regular courses of medicine in breaking up the formation of these new habits and associations of this disease in the animal economy, must be considered of the first importance; and in no instance in their exhibition should the cold water dash be omitted. By this, we instantly recover the tone or strength of the surface that may have suffered a little relaxation and debility by the hot vapor bath. A strong preparation of pepper and vinegar, or pepper and brandy, should be rubbed upon the whole surface daily, and afterwards, friction continued for some time with dry flannel. Bayberry alone, or in combination with other vegetable astringents, should be advised daily, or in frequency to suit the condition of the case; and in conjunction with these, it may be necessary to give bitter root or capsicum in small quantities, to obviate their constipating tendency. A liberal portion of nerve powder has been very favorably noticed as possessing a valuable remediate agency in the cure of this affection, and may be given in combination with composition, or other powders.

The bitter tonics may be given intermediately to advantage. Dietetic means may certainly be regarded with considerable attention towards

a successful termination of this complaint. Patients should be restricted, as much as possible, to animal diet, with the view of keeping out of the circulation the saccharine principles which vegetable substances alone afford.

When we recur to what has been stated above concerning the close chemical analogy between urea and sugar; the former being little else than a duplication of the constituent parts of the latter, with the addition of a large proportion of *azote*; it would seem that in diabetes there is a great deficiency of azote in the blood, in consequence of which the kidneys cannot form *urea*; but instead of it, secrete the saccharine matter which characterizes the disease. Now, as animal substances—especially the muscular parts, contain a large proportion of azote, whilst vegetables contain little or none of it, it appears probable, that the benefits which result from the former kind of food arise from the abundant azote which it furnishes to the system, by which the kidneys are enabled to secrete urea instead of saccharine matter. This accords with the gradual changes which occur in the urine in the progress of amendment—for in proportion as the quantity of sugar decreases, that of the urea increases.

Regular uniform exercise is highly recommended as an auxiliary mean in the restoration of this affection.

## DIABETES INSIPIDUS.

WE proceed now to the consideration of those urinary diseases in which the inordinate secretion by the kidneys is attended with an excess of one or more of the regular ingredients of healthy urine. These affections bear so close a resemblance to diabetes mellitus, that up to the time of Willis they were comprehended, indiscriminately, under the single term diabetes. Collectively, they constitute the diseases which has since the time of this writer been denominated *diabetes insipidus*; but as they are characterized by very different conditions of the urine, it is more consistent with scientific accuracy, to treat of them, as Prout has done, under their several appropriate heads.

In one variety of these urinary affections, the characteristic state of the urine consists in an excess of *urea*, with an augmentation of its quantity, often not inferior to that which occurs in saccharine matter in diabetes mellitus. Bostock has given a particular account of a case of this kind, in the third volume of the Medico-Chirurgical Transactions, with an analysis of the urine, from which it appears that the patient discharged on an average twenty pints daily, containing seven and a half ounces of urea, without a particle of sugar. But no writer has investigated this disease so minutely, and described its course and phenomena so accurately, as Dr. Prout, in his highly valuable work on the diseases of the urinary organs. In this affection, there is almost invariably a very frequent and distressing desire to pass urine, both by day and night. In



some instances, though exceedingly seldom, the quantity of urine is not much increased. In a great majority of cases, copious diuresis is a prominent symptom. "The quantity of urine, (says Prout,) appears to be particularly liable to be increased by cold weather, and by all causes producing mental agitation. In some instances the patient experiences a considerable sense of uneasiness or aching pain in the loins, and along the course of the ureters, and there is occasionally a good deal of irritation at the neck of the bladder, extending along the urethra." The skin generally retains its regular functions, being often moist, with general diaphoresis, even when the urinary affection is exceedingly aggravated. The desire for food and drink also, is not morbidly urgent, except in very violent cases; nor are the stomach and bowels often particularly deranged—the tongue being generally clean, and the alvine discharges regular, both in time and appearance. It would appear from the observations of Prout and others, that persons of a thin and spare habit of body, "with a sort of hollow-eyed anxiety or expression in their countenance," are the most liable to this complaint.

With respect to the causes of this form of urinary disease, little is known of a definite character. Prout observes that whatever debilitates the system, and particularly the urinary organs, may give rise to the complaint.

There is another variety of urinary disease, in which the presence of a large portion of albuminous matter in the urine is the characteristic symptom. This is the variety which has probably been most commonly described under the name of diabetes insipidus; for along with its albuminous principle, the urine is *always* greatly increased in quantity. There are two varieties of albuminous matter occurring in the urine—namely, the chylous and the serous. The first, according to the observations of Prout, occurs most frequently; "it may, however, be remarked, (says this writer,) that strongly defined instances of this variety are not very common, and that by far the most frequent form which the disease assumes seems to be of an intermediate character; that is to say, the albuminous matters partake in some degree of the properties of both those of chyle and serum; though generally more those of the chyle."

A morbidly copious discharge of chylous urine was known and described by the ancients as a variety of diabetes. Celsus divides too great a profusion of urine into thin and thick; the former kind, he says, though most frequent, is less dangerous than the latter variety, in which a great quantity of urine is discharged, together with chyle or milk, and the body consequently rapidly deprived of its nutritive principles. Some writers deny that the chyle ever passes off with the urine, as has been stated. They assert, that where the urine has exhibited a milky color, it must have arisen from pus formed in the kidneys, and intimately mingled with the urine in its passage down the ureters to the bladder. That this is a mistaken opinion, is satisfactorily attested by some of the most observant physicians, of both ancient and modern times. The appearance of chyle in the urine has been noticed even in apparently healthy subjects. Van Sweiten, in his Commentaries, says, "that he has seen in himself some hours after a meal, and especially after hard walking, his urine turbid and milky at the moment that it was evacua-

ted;" and, he adds, that he had afterwards observed the same kind of urine in others. Galen also seems to have noticed this chylous state of the urine. But the authority of Prout is alone sufficient to establish the opinion that the milky appearance of the urine in cases of this kind, depends solely upon the presence of unchanged chyle. Mr. Elliotson, in his edition of Blumenbach's Physiology, relates a remarkable instance of chylous urine. This case occurred in a young married woman. In the morning, the coagulum of chyle in the urine was pale, with pink streaks; in the evening it was white. After fasting for twenty-four hours, the coagulum "was extremely pale, with pink streaks." This kind of urine is extremely prone to decomposition, becoming speedily very offensive to the smell. In some instances, says Prout, the urine on standing awhile, "throws up a sort of creamy matter upon its surface."

The general symptoms which accompany this affection, after it has continued long, and is violent, do not differ materially from those that attend diabetes mellitus. In violent cases, the thirst becomes very tormenting, the appetite craving, and the skin dry and harsh, with progressive emaciation. In less aggravated cases, the constitutional symptoms are generally mild, and in some instances scarcely perceptible. The patient, however, generally complains of some degree of uneasy feeling in the præcordium, and a sensation of languor and feebleness in the muscles of the loins. I have seen two cases, in relaxed, debilitated, and emaciated females, in which the urine seemed to consist almost wholly of albuminous matter, mixed with a small portion of chyle. In both these cases, the urine changed to a jelly-like mass after standing an hour or two. Prout has given an account of a similar case. "The first specimen of urine voided in the morning," he says, "consisted of a solid jelly-like mass or coagulum, of a pale-amber color." The second specimen, voided after breakfast, resembled the first in its general character, but exhibited a whey or slightly milky color. The third specimen, voided in the evening, after an early dinner, was the most remarkable, and so closely resembled chyle in all respects, that it could scarcely be distinguished from this fluid.

*Causes.*—No age, it seems, is wholly exempt from the formation of chylous urine, although it occurs most commonly after the middle period of life; and in persons of an irritable habit of body, and impaired digestive powers from a previous course of free indulgence in the pleasures of the table, and in spiritous drinks. The exciting causes appear to be such chiefly as have a tendency to weaken and irritate the kidneys. Violent passions of the mind, and protracted courses of mercurial remedies, are also accounted among the ordinary exciting causes of this disease.

The last variety of urinary disease is, that in which there occurs *an excess of the earthy phosphates in the urine*. This affection is by far more common and distressing in its consequences, than either of the two preceding urinary complaints. Prout is the first writer who has given a definite and circumstantial account of the phenomena and character of the urinary affections, characterized by a deposition of earthy phosphates. A preternatural copiousness of urine forms, in general, a conspicuous circumstance in this variety of the disease. In some instances,

indeed, the quantity discharged is not inferior to that which occurs in the most perfect cases of diabetes. The urine is invariably pale colored; and, in many instances, it is perfectly colorless and pellucid. When this is the case, the quantity discharged is always very profuse, and it deposits no sediment on being left to cool. Occasionally it happens that the quantity of urine is not much greater than natural; and in this case, it is usually somewhat opaque, and deposits a very copious pale-colored sediment after standing awhile. In none of the kindred affections, already considered, does the urine manifest so great a tendency to decomposition as in the present complaint. In a very few hours after being voided, it becomes alkaline, and emits an extremely pungent and disagreeable smell. Connected with these morbid conditions of the urine, there always exists very great irritability of the general system, and an obvious derangement of the digestive functions. The patient is tormented with flatulency, nausea, costiveness, or diarrhœa; attended with a sense of weight and oppression after taking food; and variable and capricious appetite. "The stools are extremely unnatural, being either nearly black or clay-colored, or sometimes like yeast. These are always accompanied by more or less of a sensation of pain, uneasiness, or weakness in the back and loins. There is a sallow, haggard expression of the countenance; and as the disease proceeds, symptoms somewhat analogous to those of diabetes begin to appear—such as great languor, depression of spirits, coldness of the legs, and other symptoms capable of extreme debility."

Prout asserts, that "a large proportion of the cases which have come under his own observation, were distinctly traced to *some local injury of the back*—such as a fall from a horse, &c. Among the general causes, he enumerates protracted depressing passions; excessive fatigue. The most common local causes, besides the one already mentioned, are some irritation about the bladder, or urethra, especially when of a chronic character—"such as a foreign substance introduced into the bladder, including all sorts of calculi; the retaining of a bougie or catheter in the urethra; strictures of the urethra in particular constitutions;" and disease of the prostate gland.

When injury of the spine is the exciting cause of the disease, the prognosis may, in general, be regarded as unfavorable. Prout observes, that this affection "very rarely gives origin to calculus in the kidneys."

For the treatment of this form of the complaint, the rules laid down in diabetes mellitus will be found amply sufficient.

## MANIA, OR MADNESS.

THE definition of mania, which has hitherto been generally given, is delirium unaccompanied by fever; but this does not seem altogether correct, as a delirium may prevail without any frequency of the pulse, or fever, or without mania, as happens sometimes with women in the hysteric disease.

Some have attempted to give a definition of mania by making it consist in the raising up in the mind images not distinguishable from impressions on the senses, or, as it may be expressed, intensity of idea, converting imagination into implicit belief, and producing incorrectness of association, incoherence of expression, or incongruity of action. I think mania may be termed a false perception of things, displayed most generally in the opinion formed by the patient of his nearest friends; in a want of due connexion of the train of thought, marked by an incoherence or raving; and in a resistance of the passions to the command of the will, accompanied, for the most part, with a violence of action and furious resentment at restraint. The incapacity of distinguishing the diseased functions of the mind and the irritability of our actions, in the opinion of Dr. Spurzheim, constitute insanity.

In mania the mind is not perfectly master of all its functions; it receives impressions from the senses which are very different from those produced in health; the judgment and memory are greatly impaired, if not wholly lost; and the irritability of the body is much diminished; maniacs, it is supposed, being capable of resisting the usual morbid effects of hunger and watching.

Great insensibility certainly prevails in some states of madness, and a degree of cold which would create much uneasiness to persons of sound mind, might not incommode maniacs; but experience has shown that they suffer equally from any severity of weather. Some indeed refuse all covering; but these occurrences are not common; and it may be presumed, that by a continued exposure to the atmosphere, such persons might sustain with impunity a low temperature, which would be productive of serious injury to those who are clad according to the exigences of the season. Such endurance of cold is probably more the effect of habit than of any condition peculiar to insanity.

Some writers contend that insanity is a disease wholly of the mind, and not of the body; whereas others suppose that mania in general depends on a physical origin, or arises from disorganization, or morbid action of some part of the body, derangement of the intellectual faculties being only the effect; which supposition is somewhat supported by the appearances frequently to be observed in the head on dissection. But every species of madness, whether it has originated in the mind or body, becomes the same by continuance. In madness, both the mind and the body must ultimately be diseased; for a disease of the mind soon produces one in the body.

There are two species of madness, viz: the melancholic, and furious. In both these states the associations of ideas is equally incorrect. Between melancholic and furious madness, there seems, however, to exist an intermediate species of the disease. Great eccentricity or singularity.



ty, dejection of spirits, and violent tendency to immoral habits, notwithstanding the inculcation of the most correct precepts, and the force of virtuous example, may be regarded as only slighter shades of the disorder. By some writers the disease has been distinguished into many varieties; but probably the best division would be into chronic and acute, periodical and habitual.

Madness is occasioned by affections of the mind, such as anxiety, grief, the love of an absent object, the pain of jealousy, sudden frights, violent fits of anger, the disappointment of ambition, the haughtiness of pride, prosperity humbled by misfortune, religious terror or enthusiasm, the frequent and uncurbed indulgence of any passion; or by violent emotion, and abstruse study. In short, it may be produced by any thing that affects the mind so forcibly as to take off its attention from all other affairs. A very frequent cause of insanity arises from the pain of some imaginary or mistaken idea, which may be termed hallucination. Violent exercise, intemperance of every kind, and especially in the use of spirituous liquors, a sedentary life, the suppression of periodical and occasional discharges and secretions, repelled eruptions, injuries and malconformation of the head, excessive evacuations, mercury largely and injudiciously administered, and paralytic seizures, are likewise enumerated as remote causes. Mania sometime arises in consequence of painful protracted parturition. Certain diseases of the febrile kind, particularly phrenitis, have been found at times to occasion madness, where their action has been very violent, or accompanied by delirium.

That insanity originates more generally in a corporeal cause than is allowed, must, I think, be admitted; and perhaps is not unfrequently connected with hepatic derangement. Possibly it may now and then arise from sympathy with parts morbidly excited, and distant from the brain, and this action may be reciprocally exerted.

In some cases mania proceeds from an hereditary predisposition or constitutional bias; and of all the maladies to which the human frame is liable, and which can be entailed on posterity, mental derangement is surely the most deplorable. It is an indisputable fact, that the offspring of insane persons are more liable to be affected with insanity than those whose parents have enjoyed sound minds; which shows that a predisposition or constitutional bias to the disease may be entailed by either parent. Moreover, it frequently occurs that the descendants from an insane stock, although they do not exhibit the broad features of madness, shall yet discover propensities and eccentricities equally disqualifying for the purposes of life, and destructive of social happiness.

Some late writers on mania have, however, presumed to deny the fact of hereditary predisposition, or constitutional similarity between parent and progeny; but this surely is to fly in the face of truth, and to inculcate a doctrine very injurious to society, by throwing individuals off their guard, and encouraging them to intermarry with the descendants or offspring of insane persons.

One who is aware of a decided bias in his own person towards mental derangement, ought to shun the chance of extending and of perpetuating the ravages of so dreadful a calamity. A man so situated, in incurring the risk of becoming a parent, involves himself in a crime

which may not improbably project its lengthened shadow—a shadow too which widens in proportion as it advances—over the intellect and the happiness of an indefinite succession of beings. When, as it sometimes happens, an hereditary disposition or bias to this disease appears to sleep through one generation, it will often be found to awaken in the next with even aggravated horrors. Should the child of a maniac escape his parent's malady, the chance is small that the grand-child will be equally fortunate. The continued stream of insanity, although it occasionally conceals itself for a time, may soon again emerge to our view. Strictly speaking, however, it is only the tendency to insanity that is inherited; or, in other words, a greater facility than ordinary to be acted upon by those external circumstances that are calculated to produce the disease. Such is the proper light in which we should view what are termed hereditary predisposition and hereditary disease.

A late writer on the causes and cure of insanity, has very properly animadverted on the inconsistency of some physicians, in admitting an hereditary predisposition to mania, and at the same time denying that it is an hereditary disease.

All inquiries respecting the proximate cause of mania are involved in such a cloud of obscurity, that I shall not venture to advance any opinion on it. Many physicians have attempted indeed to account for the production of insanity from the morbid appearances observed on dissection; but these vary exceedingly in different cases; and even when they are the most marked and constant, they only serve to denote the progress and ultimate effects, rather than the actual condition wherein the disorder consists. We only know for certain, that in the majority of maniacal persons that have been opened after death, more or less organic injury seems to be, for the most part, the consequence of an inordinate determination of blood to the head.

Two constitutions are particularly the victims of madness, the sanguine and melancholic: by the difference of which its appearance is somewhat modified. It attacks persons of all complexions and colors of hair; but out of two hundred and sixty-five patients who were examined by Mr. Haslam, at Bethlem Hospital, two hundred and five were of a swarthy complexion, with dark or black hair; the remaining sixty were of a fair skin, and light brown or red haired. A particular species of insanity as sometimes occurring about the age of puberty, especially in those who have possessed a good capacity and lively disposition, and among females more than men, is noticed by this gentleman; they become by degrees listless and inactive, and the faculties are gradually obliterated, until at last complete and incurable idiotism ensues.

Children, and persons of weak intellectual powers, are never subject to madness; for how can a person despair who cannot think? On this subject Mr. Locke has a beautiful distinction. The difference, he says, between a madman and a fool is, that the former reasons justly from false data; and the latter erroneously from just data.

The most common form of insanity is the intermitting, or that in which the paroxysms of the disease are divided by lucid intervals. The accession of the paroxysms is far from being regular, but most usually they begin soon after the summer solstice, continue with more or less

violence during the heat of summer, and terminate towards the decline of autumn. Mania comes on at different periods of life; but in the greater number of cases it makes its first attack between thirty and forty years of age, probably because people at this period are more liable to be acted upon by the remote causes of the disease, or that a greater number of such causes are then applied. At this age people are generally established in their different occupations; are probably married, and have families; their habits are strongly formed, and the interruptions of them are consequently attended with greater anxiety and regret. Under these circumstances they feel the misfortunes of life more exquisitely.

Sometimes mania, however, instead of being only temporary, or occurring in paroxysms, which go off and return again at certain periods, continues during the whole of the person's life without any intermission, and the patient sinks at last under the violence of the conflict, without any abatement of the symptoms; or a state of perfect idiotism ensues.

Although insanity usually breaks out suddenly, the manners of the patient becoming preternaturally impetuous, his conversation hurried, his mind full of projects, which he pursues with restless activity, there are instances where insanity makes its approach gradually: a certain whimsicality of disposition, and waywardness or singularity of character, are observed for some time, perhaps for years, before the individual is set down by his friends as a maniac; and this is particularly the case in hereditary derangement.

In no two patients is the disease ushered in, or continued, with precisely the same appearances; for the different propensities and habits of different patients lead of necessity to a difference of idea and of expression in each. The precursory symptoms of a maniacal paroxysm are, however, very frequent as follows: The patient complains of a sense of tightness at the region of the stomach, want of appetite, costiveness, and a sensation of heat in the bowels. He is subject to a kind of uneasiness, which he cannot describe or account for; experiences a degree of fear that sometimes amounts to terror, and feels either little disposition or absolute incapacity to sleep. Soon after these appearances, incoherence and incongruity of idea are betrayed in his outward conduct, by unusual gestures, and by extraordinary changes in the expression and movements of his countenance. He generally holds his head erect, and fixes his eyes and attention upon the heavens. He speaks with a deep hollow voice, walks with a quick and precipitate step, then stops suddenly, as if arrested by the most interesting and profound contemplations. Some maniacs are remarkable for good humor and mirth, which they express by fits of loud and immoderate laughter. There are others again whose taciturnity is perpetual; who express their afflictions by tears, or who sink, without a tear, under the distressing influence of solitary anxiety. This happens in melancholia, to which there are usually added, fondness for solitude, timidity, fickleness of temper, great watchfulness, flatulence in the stomach and bowels, costiveness, and a small weak pulse. Furious madness is marked by severe pains in the head, redness of the face, noise in the ears, wildness of the countenance, rolling and glistening of the eyes, grinding of the teeth, loud roarings,

violent exertions of strength, absurd incoherent discourse, unaccountable malice to certain persons, particularly to the nearest relatives and friends, a dislike to such places and scenes as formerly afforded particular pleasure, a diminution of the irritability of the body with respect to the morbid effects of cold, hunger, and watching, together with a full quick pulse.

Insane persons are said to be usually worse in the morning; but perhaps this is not so generally the case as has been supposed. In many instances, at the commencement of the disease, they are more violent in the evening, and sometimes so the greater part of the night. It is, indeed, well known that the majority of patients of this description have their symptoms aggravated by being placed in a recumbent position. They seem of themselves to avoid the horizontal posture as much as possible when they are in a raving state, and when so confined as that they cannot be erect, will support themselves on the breech.

Of the organs of sense which become affected in those laboring under insanity, the ear has been observed particularly to suffer: few lunatics become blind, but numbers were noticed by Mr. Haslam to be deaf; and those who were not actually deaf, were troubled with difficulty of hearing.

Mania is to be distinguished from phrenitis by the absence of pyrexia and headache; and from delirium, by the state of the pulse, and not being conscious of external objects when roused, and even then the person soon relapses into a state of inattention; whereas in mania he is frequently sensible, and is often planning the means of preventing or revenging supposed injuries. A modern writer thinks that insanity is distinguished from delirium by the derangement of the intellectual faculties not being connected with bodily disorder, and that it is this circumstance which constitutes the distinction between the two maladies.

An intermittent fever supervening on madness of long standing has been known in some instances to have proved a cure for the disease; the senses have returned when the fever terminated. When madness has arisen in consequence of some other disorder, and when its attacks are slight, and do not return very frequently, a radical cure may possibly be effected; but when it takes place in consequence of an hereditary disposition, or is attended with great melancholy, and a fixed attention to one particular object, be it love or religion, we should not entertain much hope. The difficulty of relieving religious madness is acknowledged by all authors, and many cases have been evidently derived from this source in its various forms. It is indeed very obvious that those sects which are most accustomed to call up all the human passions in order to assist the propagation of their doctrines, must be most exposed to the inconveniences which result from the too violent operation of those passions.

In those cases where mental derangement has originated from a physical state that exists only for a short period, or from the sudden impression of an unlooked for calamity, an expectation of cure may for the most part be not unreasonably entertained: but when, on the other hand, by a life of debauchery, or the corroding operation of any chronic passion, the mind has been disorganized, there is in general little hope,



from either medical or moral regimen, of an entire and permanent restoration. Where there is a predisposition to mental derangement from an hereditary bias, external and accidental causes act with more violence upon it, and more readily overset reason; and such cases are usually most difficult to cure.

Patients who are in a furious state, recover in a much larger proportion than those who are melancholic. Insane persons are found to recover in proportion to their youth. The intervention of lucid intervals is always an important matter; for in proportion to the frequency, duration, and steadiness of these, are we warranted to think favorably of the issue. Under every form of the disease the hope of a recovery is usually proportionate to the time which has elapsed from its actual commencement to the period of its being subjected to a regular treatment; advanced age always rendering the prognosis more unfavorable; for a radical cure has scarcely ever been effected in the instance of a hoary-headed maniac. The probability of recovery is comparatively small after the insanity shall have lasted longer than twelve months as by this time the morbid action seems, for the most part, to tend towards morbid structure, which, when carried to any extent, will prove beyond the reach of medicine, or medical treatment. Where insanity supervenes on epilepsy or palsy, a cure is seldom effected. Should catalepsy follow upon insane paroxysms, the complaint most commonly is fixed for life, and to this occurrence females are more liable than males.

In all cases of insanity, where the first accession had been abrupt and its departure equally so, a renewal within a few weeks may be confidently expected. A perfect recovery from insanity is seldom, if ever, to be looked for when the symptoms have suddenly ceased. Madness from a long course of inebriety is rarely cured, because permanent abstinence is seldom, if ever, attained in habitual drunkards. When the furious state is succeeded by melancholy and the violent paroxysm returns after this shall have continued a short time, the hope of recovery is but small. A person laboring under furious madness who is attacked with small-pox is generally destroyed. By the books of Bethlem Hospital it appears that not quite a half, but rather more than a third of its patients, are discharged cured of their insanity.

Insanity, after continuing for a longer or shorter period without relief, commonly terminates in fatuity. This destruction of mind is almost always incurable. Sometimes, however, young persons, after having remained in a state of complete fatuity for months, or even years, are suddenly seized with a paroxysm of insanity, on the cessation of which they are restored to reason.

It has been observed by those who superintend madhouses, that the number of females annually brought in considerably exceeds the number of males. The natural processes which women undergo, of menstruation, parturition, and of preparing nutriment for the infant, together with the diseases to which they are subject at these periods, and which are frequently remote causes of insanity, as likewise the sedentary life they usually lead, and the exquisiteness of their feelings, may perhaps serve to explain their greater disposition to this malady. Women affected with mania in consequence of a puerperal state, recover in a larger

proportion than patients of any other description: indeed the insanity subsequent to parturition is generally curable, if the curative attempts be rational. From whatever cause the disease may be produced in women, it is to be considered as unfavorable to recovery if they are worse at the period of menstruation, or have their catamenia either in very small or immoderate quantities.

A curious circumstance attending mania is, that by its access other diseases are often cured. Some cases of dropsy which were removed by an attack of mania, are mentioned by Dr. Darwin, all of which (he thinks) were affected by the increased energy of some parts of the system, owing to the addition of volition to the sensorial powers of irritation, or association.

The morbid appearances most generally to be observed on opening the heads of maniacal subjects are, an opacity of the arachnoid membrane, and occasionally a thickening thereof; a preternatural determination of blood to the membranes as well as the substance of the brain itself; together with an effusion of water into the ventricles, and between its membranes and convolutions. Exclusively of these, ossification of some of the arteries, or a preternatural hardness of the substance of the brain, is occasionally observed. Sometimes the pineal gland has been discovered charged with sabulous matter. Mania has ever been found on dissection to be connected with a morbid state of the brain and its membranes; but whether this peculiar state ought to be regarded as the cause or effect of the disease, is a point not yet satisfactorily ascertained.

From the anatomical observations of Dr. Greding, it appears that the greater number of insane people fall into a state of atrophy or decay towards the close of their life, as it was observed that of one hundred maniacs sixty-eight died in this way. Of all diseases, dropsy of the chest appeared to be that to which maniacs are most subject, for out of one hundred of them, seventy-six labored under it.

The treatment of mania consists in the management of the patient, in humoring the subject of the mental disease, and the aid which medicine may afford; but although the first is of great consequence, still where the mental faculties are only partially affected, the assistance of medicine is of high importance.

That maniacs require medical aid in the first stage of the disease, cannot, I think, admit of a doubt; and very likely the recovery of such persons will depend in a great degree upon early medical attention and assistance; without it the chance of a cure will be much lessened. When the disease arises in women, (which it is apt to do between the ages of sixteen and forty,) moral treatment alone, let the management be ever so proper, will not be likely to recover them without the aid of medicine.

In the management of the insane, the great objects to be aimed at are, in the first place, that the invalids be separately and properly classed, both in respect to their ages, sexes, condition in life, and kind or degree of their disorder. Secondly, free ventilation, so insured as to guard against undue exposure to the inclemencies of the weather. Thirdly, a rigid system of cleanliness. Fourthly, such a judicious regulation both of mental and bodily exercise as shall excite without fatigue, and exhila-

rate without exhaustion : and, lastly, a combination of tenderness, lenity, and conciliation, with proper firmness, at the same time on the part of the keepers.

It should always be the object of the superintendant and keeper to gain the confidence of the patient, and to awake in him proper respect and obedience, which is to be effected by discipline of temper and dignity of manners. Tyrannical severity may excite fear in the lunatic, but it will be mingled probably with contempt. In the management of insane persons, the superintendant must endeavor to obtain a complete ascendancy over them. When this is once effected, he will be enabled on all future occasions to direct and regulate their conduct according as his judgment may suggest. He should possess firmness, and, when occasion may require, should exercise his authority in a peremptory manner. He should never threaten but execute, and when the patient has misbehaved, should confine him immediately ; and as example operates more forcibly than precept, it will be best to order the delinquent to be confined in the presence of the other patients, be the institution a public or private one. Such a conduct will display authority ; and the person who has misbehaved becomes awed by the spectators and more readily submits.

The keeper should convince the maniac that all impropriety of conduct will be restrained. A prudent and vigorous coercion will generally restrain his fury, and sometimes restore rationality very speedily. He must then be treated with lenity and kindness, and with the manners due to his station in life, which will insure the respect of the pupil to his master, upon which every indulgence consistent with safety and propriety may be allowed. It is obvious, therefore, that a system of intimidation without cruelty, of restraint without indignity, of rigid order and discipline, combined with lenity and conciliation, is the only rational and successful method of combating the extravagances of lunatics.

To obtain a salutary influence over the wanderings of a maniac, we ought first to secure his confidence. This cannot be done without behaving towards him with a delicacy due to his unfortunate state, which for the most part ought to be regarded, not as an abolition, but as a suppression merely, of the rational faculties. There is indeed ground to apprehend that fugitive folly is too often converted into a fixed and settled frenzy ; a transient gust into an irremovable tenant of the mind ; an occasional aberration of intellect into a confirmed and inveterate habit of dereliction, by a premature and too precipitate adoption of measures and methods of management, which sometimes indeed are necessary, but which are only so in cases of extreme and ultimate desperation.

At some asylums for the reception of insane persons, but more particularly those of a public nature, we have just reasons for apprehending that severe and harsh treatment is not unfrequently resorted to, and the strong principle of fear sternly applied by the blows, the strait waistcoat, or chains, to be the most usual means adopted for correcting the wanderings of reason, or the diseased ebullitions of passion ; as it is less to fetter by these restraints than by the assiduities of sympathy or affection. Nothing, however, has a more favorable and controlling influence over one who is disposed to, or actually affected with melancholia or

mania, than an exhibition of friendship or philanthropy: excepting, indeed, in such cases, and in that state of the disease, in which the mind has been hardened and almost brutalized by having already been the subject of harsh and humiliating treatment.

Under slight attacks of mania, where the degree of irritation is trifling, as well as during a state of convalescence, it will not be necessary to confine the patient within doors in fine weather; taking care, however, at the same time, to put it out of his power to escape, or do any injury to himself or others. His mind is to be soothed, and his attention diverted as much as possible, by getting him to engage in some exercise or amusement that will employ both body and mind at the same time, and that will divert the latter from pursuing any train of thought. He should be recommended to avoid as much as possible thinking upon questions of a perplexing and intricate nature. In melancholia, this plan will be doubly necessary; and we may likewise allow entertaining books, cheerful company, amusing scenes, music of the exhilarating kind; and if the patient is fond of gardening, the employment of some portion of his time in this way will prove both healthy and agreeable.

It has been observed, that in all institutions for the insane, the male patients, who assist in digging, planting, weeding, wheeling, wood-cutting and making fires, &c., and the females who are employed in washing, ironing, and scrubbing floors, often recover; while persons whose rank exempts them from performing such services, languish away their life within the walls.

In the management of insane persons, the value of exercise and employment is to be highly estimated. Female patients may be employed in sewing, knitting, or domestic affairs, and many of the convalescents may assist the attendants. Of all the modes by which patients may be induced to restrain themselves, regular employment is perhaps the most efficacious, and those kinds of it ought doubtless to be preferred both on a moral and physical account, which are accompanied by considerable bodily action—that are most opposite to the illusions of his disease, or the hallucination possessing the mind. At the Lunatic Hospital at Charenton, in France, the experiment has been made to induce the patients to act plays for their amusement. To these exhibitions their friends were invited, and a beneficial effect was produced thereby.

It has been asserted that some maniacs have been cured by being compelled to constant and even hard labor; and as a forced attention to the conduct of any bodily exercise is a certain means of diverting the mind from pursuing any train of thought, it is probable that such exercise may be useful in many cases of mania.

Monsieur Pinel, in his *Treatise on Insanity*, tells us, that at the principal hospitals in Spain, but more particularly the one established at Saragossa, the maniacs capable of working are distributed every morning into separate parties. An overlooker is appointed for each class, who apportions to them all, individually, their respective employments, directs their exertions, and watches over their conduct. The whole day is thus occupied in salutary and refreshing exercises, which are interrupted only by short intervals of rest and relaxation. The fatigues of the day prepare the laborers for sleep and repose during the night.



Hence it happens that those whose condition does not place them above the necessity of submission to toil and labor, are almost always cured; whilst the grandee, who would think himself degraded by exercise of this description is generally incurable: by retaining his privileges, he retains his lunacy.

In violent states of mania, the patient should be confined alone in a dark and quiet room, so that he may not be affected by the stimuli of light and sound, such abstraction more readily disposing to sleep. To prevent him from committing any violence his hands ought to be properly secured by manacles, and he may likewise be confined by one leg, or he may be strapped by the hands and legs in a large chair fastened to the floor. As a horizontal posture tends to increase the fulness of the vessels in the brain, this should be avoided in the day-time. The strait waistcoat is another mode of confinement well calculated to prevent maniacs from doing any injury either to themselves or others; but in the furious state, and particularly in warm weather, it is apt to irritate and increase that restlessness which patients of this description usually labor under. Where malevolence forms a prominent feature, and the person is very furious, close confinement in the manner just detailed is doubly necessary; but chains are not to be used on any occasion.

Insane persons should be made to rise early, to take such exercise as their condition will admit of, and have their food served up to them at stated times. Independently of such regularity contributing to health, it also renders them more manageable. In all cases of madness it will be proper to remove the patient from those objects with which he was formerly acquainted, as these might call up ideas and the various associations; and on this account a change of situation, and removal from his friends, will be advisable; for it is a fact well known to those who superintend lunatics, that patients are seldom or never recovered at home. It not unfrequently happens, indeed, that maniacs, who have been brought immediately from their families, and who are said to be in a violent and ferocious state at home, become suddenly calm and tractable when placed in a lunatic asylum. On the other hand, it is equally a fact, that there are many patients whose disorder speedily recurs after having been suffered to return to their families, although they have for a length of time conducted themselves, under confinement, in a very orderly manner. The restraint, cunning, and dissimulation, which many insane persons are capable of, are well known to those who are conversant with them; but the ignorant are apt to cry out against secluding them from society, because they probably happen to conduct themselves with propriety before strangers, and in short conversations appear coherent and rational.

To attempt the complete seclusion of a maniac in a furious state at his own house in the bosom of his family, is by no means desirable, and indeed it is seldom practicable; for a patient confined at home naturally feels a degree of resentment, when those whom he has been accustomed to command refuse to obey his orders, or attempt to restrain him.

Against mere insanity, unaccompanied by bodily derangement, medicine appears to be almost powerless: but where an insane person happens to be diseased in body as well as mind, medicine, or more strictly

medicinal treatment, is not only of as great importance to him as to any other person, but much greater, as diseases of the body are commonly found to aggravate those of the mind. In acute cases of mania, patients require speedy as well as regular assistance, to prevent that disorganization which might lead to protracted or incurable insanity.

For the purpose of obviating the fulness and tension of the vessels of the brain, full courses of medicine to equalize circulation, and cathartics are mostly to be depended on.

It is an assiduous, a continued, an alternating and alterative use of cathartic and opening medicines, the operation of which is gentle, that promises, and in reality has proved, to be beneficial in cases of madness and melancholy. When the nervous system is so much deranged as the cases in question suppose, there is almost invariably a tendency to faulty action in the first passages, and their immediately connected viscera. This state of the stomach and bowels comes in the course of time to react as it were upon the nervous system, and to prove an occasion for the continuance of that derangement of which it was at first a mere consequence.

Cathartics are of the utmost importance therefore in the treatment of insanity, but more particularly when the excitement is great; and as constipation is a common occurrence with maniacs, those who have their superintendence should regularly inquire into the state of their bowels. In periodical mania, the paroxysms are usually preceded by obstinate costiveness; and a dose or two of some purgative medicine, at an early period, will frequently put a stop to the progress of the attack; which fact ought to have due weight. Moreover, it has frequently happened, that a speedy convalescence has ensued in mania after the coming on of a diarrhœa, and in a few instances it has proved a cure.

The mind is apt to be much affected, both after abortion and delivery; and in some instances the woman becomes either melancholic or mad, the latter being more frequent. This mania is in general sudden in its attack, and is often preceded by great palpitation and some other nervous affection. Puerperal mania seldom takes place without a suppression of the lochia, or of the lacteal secretion.

The most common time for it to begin is a few days, or a week or two, before delivery. Sometimes it occurs after some months, during nursing, or soon after weaning. It has occasionally been noticed to have arisen even at the commencement of labor.

The disease, although frequently tedious, is oftener got the better of than any other species of mania.

The restorations to health are usually marked either by a return of the lochial discharge, by the accession of milk in the breasts, by copious leucorrhœa, by a mucous sanguineous diarrhœa, by a return of the menses, which had been suppressed during pregnancy, by abscesses, but very rarely by pregnancy.

In the treatment of puerperal mania our attention should be directed to the following circumstances: 1st, To protect the patient from injuring herself. 2dly, To evacuate by occasional gentle purgatives any impurities in the alimentary canal which might keep up or aggravate the original disorder. 3dly, To watch the state of the circulation, and if con-

gestion or inflammation in the brain should supervene, to remove it by full courses of medicine and diaphoretics. 4thly, To procure rest by night if required, by administering the vapor bath and liberal portions of nerve powder. 5thly, To manage the mind of the patient according to circumstances, soothing it during irritation, encouraging it during depression, and when the violence of the disease has subsided, to facilitate the recovery of the native feelings and faculties by presenting their natural objects.

In a state of convalescence the mind and attention are to be occupied by cheerful conversation, music, light reading; and afterwards by a change of scene, and regular exercise daily in a carriage or on foot.

Melancholy madness comes on later among lying-in women than furious delirium. The disease differs nothing in appearance or symptoms from melancholy occurring at other times. It is however frequently obstinate, but in common goes off after the child is weaned, and the strength has returned.

Insanity has sometimes been pretended, for the purpose of evading justice after the perpetration of murder. The principal means for the detection of such pretenders to madness are, a consideration of their probable motives for counterfeiting this state; a strict examination of their conduct when they suppose themselves to be alone and not overlooked, contrasted with their behavior when they are conscious of being observed; the existence of that peculiar fœtor in the exhalations which so generally accompanies the true maniacal state; and the manner in which the subject is affected by the administration of drastic drugs.

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### INCUBUS, OR NIGHT-MARE.

IN this disease there is such a weight and oppression felt as to impress the patient with the idea of some living being having taken its position on the chest, inspiring terror, impeding respiration, and paralyzing the voluntary muscles.

Incubus will sometimes occur in the healthiest person when any indigestible food happens to be in his stomach or the upper portions of the alimentary tube during sleep; but a peculiar habit of body is necessary to render a person liable to it. Those of a contemplative disposition, and of that particular temperament which disposes to hypochondriasis and other nervous diseases, are very subject to its attacks. Sedentary employments, confinement within doors, literary studies, anxiety of mind, &c., all predispose to visitations of incubus. Sailors have been observed to be very liable to this disease. Hypochondriacs and pregnant women are also its victims, but the male sex more frequently than the female. In advanced life it is not often met with, except where corpulency, asthma, or a tendency to lethargy exists.

The disease always attacks during sleep: if this be profound, the first approach of the fiend is usually in the shape of a disagreeable dream.

The patient imagines himself exposed to some danger, or pursued by an enemy whom he finds it impossible to avoid. He frequently feels as if his limbs were tied, or deprived of motion : at other times he fancies himself confined at the bottom of a cavern or vault, and in danger of suffocation. This is often the whole of the sensation which the disease produces, when it goes off either by an obvious sleep or dream. Here incubus is not fully formed ; the predisposition is only evinced.

When the paroxysm actually takes place, the uneasiness of the patient in his dream rapidly increases, till it ends in a kind of consciousness that he is in bed and asleep ; but he feels oppressed with some weight which confines him on his back and prevents his breathing, which is now become extremely laborious, so that the lungs cannot be fully inflated by any effort he can make. The sensation is now the most painful that can be conceived : the person becomes every instant more awake and conscious of his situation ; he makes violent efforts to move his limbs, especially his arms, with the view of throwing off the incumbent weight, but not a muscle will obey the impulse of the will ; he groans aloud, if he has power to do it, while every effort he makes seems to exhaust the little remaining vigor. The difficulty of breathing goes on increasing, so that every breath he draws seems to be almost the last that he is likely to draw ; the heart generally moves with increased velocity, sometimes is affected with palpitation ; the countenance appears ghastly, and the eyes half open. The patient, if left to himself, lies in this state generally about a minute or two, when he recovers all at once the power of volition, upon which he either jumps out of bed, or instantly changes his position, so as to awake himself thoroughly. If this be not done the paroxysm is very apt to recur again immediately, as the propensity to sleep is almost irresistible ; and if yielded to, another paroxysm of night-mare is, for the most part, inevitable.

Where the disease is established, some confusion of the head, singing in the ears, and spectra before the eyes, will often remain for a time after being roused. There is often also a sense of weight at the stomach, an unpleasant taste in the mouth, acceleration of pulse, and palpitation of the heart.

When the paroxysm goes off, as frequently happens, without the patient awaking, strange hallucinations are occasionally produced, which give origin to reputed visions and supernatural visitations, even among people of great intellectual cultivation. The degree of consciousness, during a paroxysm of night-mare, is so much greater than ever happens in a dream, that the person who has had a vision of this kind, cannot easily bring himself to acknowledge the deceit unless he awakes out of his paroxysm, and finds some incongruity in respect to time or place, which proves the transaction to be an illusion.

Spasmodic constriction of the diaphragm and muscles of the chest has been assigned by some as the proximate cause of incubus. The disease is not attended with danger.

The complaint seems to be altogether dependent on a state of dyspepsia, and is usually accompanied with a distension of the stomach and bowels ; by flatus, constipation, and acid eructations. Whenever the dyspeptic symptoms are urgent, a few courses of medicine with appro-



priate after tonics will generally be required. Costiveness is to be guarded against by some gentle aperient, such as a few grains of rhubarb with magnesia.

Persons subject to incubus ought carefully to shun all kinds of food likely to prove flatulent or of difficult digestion, particularly for supper; they should be guilty of no intemperance whatever, and should avoid gloomy contemplations, a sedentary life, and particularly intense study, with late hours. Moreover, they should always have some person to sleep near them, so as to be immediately awakened by their groans and struggles; for the sooner a person is roused from a paroxysm of the night-mare the better, as when in a very high degree, it differs little from a fit of epilepsy. Where medicine is not at hand, a glass of any cordial will frequently dispel flatulence, and prevent the paroxysm of incubus.

Acidities in the stomach are productive of the worst species of dreams; and nothing will so effectually prevent and remove such crudities as a little of the subcarbonate of magnesia mixed in peppermint water, and taken at bed-time.

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### ATROPHIA, OR ATROPHY.

THIS disease is marked by a gradual wasting of the body, unaccompanied either by a difficulty of breathing, cough, or any evident fever at first, but usually attended with a loss of appetite and impaired digestion, depression of spirits, and general languor.

The causes which commonly give rise to it are, a poor diet, unwholesome air, excess of venery, scrofulous disposition, fluor albus, severe evacuations, continuing to give suck too long, a free use of spirituous liquors, mental uneasiness, and worms; but it frequently comes on without any evident cause.

Young persons of both sexes who are of a delicate make, and at the same time grow very fast, are apt to be attacked with this complaint before they arrive at the age of puberty. It is particularly prevalent in large and populous cities, where children are deprived of ready access to exercise in pure air, or where they are confined in crowded school-rooms. Children, also, who are employed in manufactories, where their occupation and confinement are such as to weaken and enervate them, are very likely to be attacked with it.

Emaciation of the body very frequently arises from a morbid state of the mesenteric glands, induced by scrofulous inflammation, to which they appear peculiarly liable. Whatever may be the effect of diseased mesenteric glands upon the chyle, we are warranted in assigning this as the most frequent cause of bodily emaciation in children, seeing that the two states are almost invariably associated.

Sluggishness, lassitude on the slightest exertion, depravity and loss of appetite, wasting of the muscular flesh, paleness of the countenance, with bloating, swelling, and prominence of the belly, œdema of the low-

er extremities, an irregular and generally costive state of the bowels, a change in the color and odor of the fæces, and fetid breath, mark the beginning of the disease. When these symptoms have continued for a little time, they are followed by alternate paleness and flushing of the countenance, heat and dryness of the skin, a feeble and quick pulse, thirst, fretfulness, great debility, and disturbed sleep.

Atrophy, arise from whatever cause it may, is usually very difficult to cure, and not unfrequently terminates in dropsy.

In all cases of atrophy, the patient should make use of food that is nutritive and easy of digestion, and it should be taken frequently, but in a small quantity at a time. He should likewise breathe a pure, dry, and wholesome air; taking such moderate exercise every day as his strength will admit, particularly on horseback.

*Treatment.*—Repeated and full courses of medicine, with the best tonic bitters. If worms are the cause they should be destroyed by the vermifuge medicines advised under that head; if by sexual excesses, or the continuing to give suck too long, these must be discontinued; if from severe evacuations, they must be suppressed; if from impoverished diet and unwholesome air, these must be quickly changed; if from a scrofulous disposition, the treatment adopted for that disease is required; and if from a venereal taint which is sometimes the case, constitutional remedies and regimen applied under that form of malady should be resorted to.

## CHRONIC BRONCHITIS.—BRONCHIAL CONSUMPTION.

CHRONIC inflammation of the mucous membrane of the bronchia, is an affection of very frequent occurrence in cold and variable climates. In its simplest form it constitutes those protracted catarrhal affections which are common during winter in old persons, and in such as are predisposed to pneumonic irritation. Cases of this kind generally commence with the cold weather, and continue to the end of winter. They are characterised by a troublesome cough, attended with copious expectoration of a viscid muco-purulent, or a whitish frothy matter; uneasy and somewhat oppressed respiration, accompanied at times with wheezing; more or less weight and uneasiness in the epigastrium; loss of appetite; a slightly furred tongue; irregular action of the bowels; a quick and irritated pulse, particularly towards evening; and deep red and scanty urine. The coughing usually occurs in fits of considerable violence, being generally most severe in the morning on arising from bed, or on passing from a warm to a cold air. Sudden atmospheric vicissitudes, also, seldom fail to increase the violence and frequency of the spells of coughing; and the same effect is usually produced by the inhalation of irritating vapors, fine dust, smoke, and occasionally by the act of swallowing food. Slight transient pains, are, at times, felt in the chest; frequently, however, no painful sensations whatever are experienced, ex-

cept immediately after a fit of coughing, when a general aching pain is felt for a few moments in the breast.

There is another variety of chronic bronchitis, which, in its general phenomena and effects upon the system, bears so close a resemblance to tubercular phthisis, that it is not unfrequently mistaken for this latter affection—and which is described by authors, under the name of

*Catarrhal Consumption.*—A large proportion of the cases usually regarded as true tuberculous consumption, consists of instances of chronic bronchitis; and as a correct diagnosis between these two affections is of much practical consequence, it is especially important that particular attention be paid to the distinctive phenomena, and pathological conditions of the present malady. This, as well as the former variety of bronchitis is the consequence generally of neglected catarrh; and it occurs occasionally as the result of an acute attack of bronchial inflammation. At first the symptoms resemble those of ordinary catarrh—the expectoration being viscid, thick, and opaque, but not yellow, containing small lumps, of a firm or viscid, grayish, translucent mucus, which sink in water. Mixed with these sputa, we sometimes find small membranous or flaky substances, which float on the surface of the water. As the disease advances, this viscid mucus becomes more and more mixed with a yellowish opaque fluid, resembling pus, and often slightly streaked with blood. In many instances, the expectoration, at last, acquires a whitish opaque appearance, resembling cream, and sometimes a uniformly greenish yellow color, which readily sinks in water. At first, the pulse becomes slightly accelerated and tense towards evening; and the heat of the surface varies in the course of the day, being sometimes above, and at others below the natural standard. Partial sweats, about the head and breast, occur during the night. The thirst is generally considerably increased; the urine is high-colored, and deposits a copious reddish sediment on cooling. A sense of soreness in the chest, with an occasional transient stitch in the side, is felt in the majority of instances; but there is rarely any *fixed* pain in the thorax. The cough is usually severe—particularly on rising out of bed in the morning, at which time, the respiration is more or less wheezing, accompanied with a feeling of tightness in the breast. If the disease continues unchecked in its course, the expectoration becomes at last purulent and extremely copious. Debility and emaciation proceed rapidly and the difficulty of breathing, and sense of weight and tightness across the chest, become more and more distressing. The pulse is now generally very frequent, being seldom under one hundred and twenty in a minute. In the early part of the day the face is usually pale, but a deep flush on one or both cheeks is commonly observed during the evening febrile exacerbations. The tongue becomes clean, and in many instances “it assumes a shining appearance, and is redder than in health.” Profuse and exhausting night sweats generally occur at this advanced stage of the disease; and towards the termination of fatal cases, colliquative diarrhœa, and œdema of the ankles, supervene as in tubercular phthisis pulmonalis. Indeed, in the latter stages of the disease, it is generally difficult, if not impossible, to distinguish it with certainty from consumption; nor is it less fatal in its tendency after it has advanced to this stage, than genuine pulmonary

consumption. When chronic bronchitis is complicated with a liver affection, an occurrence by no means uncommon, it forms what authors have termed "*dyspeptic consumption*." In this variety of the disease we have, in addition to the ordinary phenomena of chronic bronchial inflammation, various symptoms indicative of hepatic disorder—such as tenderness and tension in the epigastrium and right hypochondrium; irregularity of the bowels, with unnatural stools; a sallow hue of the skin, and yellowness of the conjunctiva; flatulency; indigestion, with variable appetite; increased dyspnoea, and cough after taking hearty meals; furred and brown tongue; foul breath; and occasional nausea or vomiting. In some instances of this variety of bronchitis, no symptoms indicative of pulmonic affection occur in the commencement of the malady, the only manifestations of disease being such as are usually present in liver affections. A dull pain and tenderness in the right hypochondrium, with increased uneasiness by lying on the left side; irregularity of the bowels; foul tongue, and depression of spirits, are, in such cases, the first symptoms complained of by the patient. The first warnings of disease in the bronchial membrane are slight. There is a dry cough, unattended with any pain. By degrees the cough becomes more troublesome, and when it continues for some time, a tenacious mucus is expectorated. The breathing, too, is in some degree affected, and the patient complains of weight and tightness across the chest. The bronchial affection now advances with more or less celerity, until a copious purulent expectoration, and the usual symptoms of hectic, are fully established.

*Diagnosis.*—The following diagnostic circumstances between chronic bronchitis, in the early period of its course, and tubercular phthisis, will in general enable us to distinguish these two affections from each other. In chronic bronchitis the face is generally pallid, and the lips of a bluish hue. In tubercular phthisis the lips are red, and the cheeks more constantly flushed. "In the beginning of chronic inflammation of the bronchia, the hands and feet are often cold, and the temperature of the surface altogether more variable than in tubercular consumption." More or less inflammation and soreness usually occur in the upper portion of the pharynx, during the early period of chronic bronchitis, which is very rarely the case in tubercular phthisis. In the former affection the expectoration is free almost from the commencement, and continues to be blended with a large portion of transparent viscid mucus to the end of the disease. In tubercular consumption, on the other hand, the cough is for a long time short and dry. Chronic bronchitis is attended with much more oppression in the chest and wheezing respiration, though less pectoral pain than true pulmonary phthisis. The paroxysms of hectic fever are much less regular in chronic bronchitis than in tubercular phthisis. Besides these diagnostic indications, the presence or absence of the ordinary signs of a scrofulous habit, as well as the origin and general progress of the disease, will, in general, aid us considerably in discriminating these two affections. In its commencement and early stage, chronic bronchitis is usually much more distinctly inflammatory than scrofulous phthisis. It should be remarked, however, that these two forms of pulmonary disease may exist simultaneously; and



phthisis pulmonalis is, in fact not unfrequently associated in its advanced periods with chronic mucous inflammation of the bronchia.

*Post mortem appearances.*—On opening the thorax the lungs do not collapse; the capillaries of the mucous membrane are dilated and strongly injected, giving, in some instances, an appearance to this membrane, as it was composed of a congeries of vessels. This membrane is generally considerably thickened, and in many cases it is found ulcerated in different parts of its extent. The bronchial cells are usually much engorged with purulent matter, mixed with a bloody serous fluid, and a portion of frothy mucus. In some cases the bronchial membrane is covered with numerous minute pimples or eminences, bearing some resemblance to pustules. Sometimes the inflammation is found to have extended from the mucous membrane to the surrounding cellular and pulmonary structures; and sometimes the submucous cellular texture exhibits only a state of redness and vascular congestion; whilst in other instances this structure is condensed and elastic by the deposition of lymph into its interstices. When the inflammation has extended to the substance of the lungs, we usually find it somewhat hard and dense, with loss of its natural elasticity and compressibility. In some cases the pleura is thickly sown with minute tubercular depositions, showing that the diseased excitement had extended itself to this membrane. Broussais states, that in the fatal cases of chronic bronchitis among the soldiers of the French army, induration of the substance of the lungs was almost a universal pathological phenomenon; and he ascribes the great frequency of this disorganized state of the pulmonary structure, to the exposure of the soldiers to the wet and inclement weather, while in a state of debility and privation. He states that more or less extensive portions of the parenchymatous substance of the lungs were almost always found in a state of red hepatisation, interspersed with softened and broken down parts, as if putrefaction had taken place in these points.

*Causes.*—Chronic inflammation of the mucous membrane of the bronchia may occur as the sequel of acute bronchitis. *Most commonly, however, it arises from neglected catarrh.* It is the consequence sometimes of measles; of hepatic disease; and of protracted disorder primarily located in the digestive organs. It may also proceed directly from the influence of atmospheric inclemency and vicissitudes of temperature; and from the inhalation of irritating vapors or particles of matter floating in the atmosphere—a common source of the disease among stone-cutters, needle-grinders, millers, &c. It occasionally occurs, also, in consequence of hooping cough—particularly from taking cold while under the influence of this affection.

## PHTHISIS PULMONALIS, OR PULMONARY CONSUMPTION.

THE assemblage of morbid phenomena, usually designated by the term *consumption*, may arise from various pathological conditions of the respiratory organs, which in a practical point of view, it is of much consequence to discriminate from each other. Thus, the symptoms by which physicians are in the habit of recognizing the presence of consumption may depend: 1. On chronic inflammation of the mucous membrane of the bronchia; 2. On ulceration and chronic inflammation of the larynx or trachea; 3. Chronic inflammation of the pleura; 4. Inflammation and the formation of vomica, or abscesses in the parenchymatous substance of the lungs; 5. Ulceration of hepatised lungs; 6. Ulceration with melanosis; 7. Infarction of the lungs with morbid cartilaginous granulations; and, 8. Softening of tuberculous matter in the lungs, with more or less chronic inflammation and disorganization of the pulmonary tissue.

1. *Laryngeal and tracheal Consumption*.—Ulceration of the *larynx* or *trachea* gives rise to what is termed *laryngeal* or *tracheal* consumption, a variety of pthisis, which is generally rapid in its course, and always of a most fatal tendency.

Tracheal and laryngeal consumption usually begin with a slight tickling cough; an obscure feeling of uneasiness or pain in some part of the trachea or larynx; occasional oppression of breathing, and slight febrile irritation in the evening. One of the first and most constant symptoms of this variety of the disease is *a change of the voice*; which becomes indistinct, hoarse, feeble, and whispering. The patient is apt to feel and press the larynx or trachea with his fingers. When the larynx is the seat of the local affection, the first words in the morning are uttered with considerable difficulty. The pain in the larynx or trachea, is always increased by coughing, external pressure, and by the inhalation of irritating vapors. When the trachea is the part affected, an increase of the pain is experienced on bending the head backwards, or on turning it round. This is not the case when the larynx is the seat of the disease, here the pain, as well as the cough, is increased by the use of stimulating gargles, and the inspiration of cold and damp air. In laryngeal consumption, the cough is generally violent early in the morning, until something is expectorated; and like spasmodic cough, it often subsides for a considerable time, and then returns in sudden and violent paroxysms, the inspiration during the fit of coughing being stridulous, as in croup. A fit of coughing is almost always excited, when the patient begins to swallow; and it seems at first as if the cough were excited only by quick and careless swallowing, yet as the disease advances, the utmost caution in this respect will not prevent this act from exciting the cough. The quantity of the sputa is not great in the laryngeal variety of the disease; but, in tracheal pthisis, it is often abundant, consisting chiefly of a viscid, transparent, and frothy mucus, with small masses of purulent matter floating in it. When the disease is once fully established, the usual symptoms of hectic fever occur, the

body wastes rapidly, the skin becomes sallow, and the face generally pale, with a transient flush on one or both cheeks in the evening, and a peculiar haggard and anxious expression of the countenance, with an irritable and dejected state of the mind.

The ordinary *causes* of this variety of phthisis are : neglected catarrh ; hooping cough ; measles, and syphilis. Dr. Armstrong mentions an instance, which was excited by an external tumor pressing on the wind-pipe.

2. *Pleural Consumption*.—Another variety of consumption, as is stated above, depends on effusion into the cavity of the thorax from *chronic inflammation of the pleura*. While the effusion into the cavity of the chest is going on, the lung becomes more and more separated from the surface of the thorax, being gradually compressed by the accumulating fluid until it is reduced to a very small size, and more or less disorganized in its structure. Whilst this is going on, ulceration sometimes takes place in some part of the pulmonary pleura, and the corresponding substance of the lung, and an opening is thus made into the bronchial tubes, through which the effused sero-purulent fluid is discharged by coughing or expectoration. When this takes place, irritative fever, with night sweats, frequent cough, emaciation, and in short, all the ordinary symptoms of phthisis pulmonalis, usually supervene. This form of pneumonic disease is generally the consequence of acute plenitis. This affection is characterized by a sense of oppression in the chest on lying down ; difficult and hurried respiration on ascending stairs, or muscular exertion ; short, disturbed sleep ; paucity of urine ; a short, tickling cough, aggravated on first lying down ; spells of hurried and oppressed breathing after speaking ; and generally, more or less soreness of the external surface of the affected side of the chest. The patient is easiest when in a sitting posture ; and “ if requested to take a deep inspiration while in the erect position, he will generally do it with little apparent difficulty ; but lay him down flat, and cause him to fetch his breath deeply, he will be almost certain to complain of pain, tightness, soreness, load, or some kind of inconvenience in the chest.” Death often occurs suddenly, and is almost invariably preceded by considerable œdema of the legs and feet. In some instances, after the effused fluid is discharged through the lungs, the progress of the disease becomes arrested, and the patient recovers a tolerable state of health. When this occurs, the affected side of the thorax contracts to a very manifest degree, forming what Laennec describes under the name of *contracted chest*. In some instances, where ulceration establishes a communication between the bronchial cells and the cavity of the pleura, more or less of pneumo-thorax occurs ; but more generally adhesions take place around the fistulous opening, which prevent the escape of air into the chest from becoming so considerable as to compress the lungs.

3. *Imposthymous Consumption*.—Consumption from the formation of an *abscess* in the lungs, is an extremely rare occurrence, although formerly supposed to be one of the most common forms of the disease. Laennec states as the result of his observations, that small abscesses in the pulmonary tissue are not found above four or five times, and large ones not above once in several hundred cases. He regards almost the

whole of the reported cases of pulmonary abscesses of the lungs as excavations formed by the softening of tubercular masses. It is nevertheless probable, from the observations of others, that abscess of the lungs is not so uncommon as is asserted by Laenec. Armstrong mentions several instances of this kind, and cases are related by Morgagni, Bailie, Foubert, Wright, Haller, Lettson, and many others.

4. *Ulceration* of the substance of the lungs, is also occasionally met with in phthisis pulmonalis. Bayle says that this form of the disease occurs only in adults, and most commonly in persons of advanced age. "The lungs of those who die of this affection, present more or less extensive ulcerations, the parietes of which are as black as charcoal, very firm, and several lines in thickness. The parts not in the immediate vicinity of these ulcers, appear to be perfectly healthy; but if the disease affects the whole lung, it is hard, compact, black, resembling sometimes leather half burned."

This form of phthisis is often of long duration, and seldom gives rise to any alarming symptoms until it has continued for a considerable time. The patient usually has a moderate cough, attended with a whitish or white puruloid matter, slightly opaque, and usually in roundish masses, swimming in a considerable quantity of a thin mucus. These sputa always swim in water. There is little or no pain whatever felt in the chest; and in some cases the patient is entirely free from feelings of indisposition. Nevertheless, the body gradually wastes; the pulse is generally somewhat more frequent than natural, and, occasionally, the cough excites vomiting. At last the emaciation usually becomes extremely great, although the patient seldom complains of much illness or uneasy sensation. Very considerable œdema of the legs is a common occurrence towards the conclusion of the malady.

5. *Cancerous Consumption*.—The substance of the lungs is liable to a species of cancerous degeneration, giving rise to a slow and most fatal variety of phthisis pulmonalis. Fortunately, however, this is a very rare variety of pulmonary disease. When the cancerous masses are insulated, there are, in general, many of them throughout the lungs; but the surrounding pulmonary structure is usually in nearly a healthy state. "When, however, the cancerous masses are not insulated, different portions of the lungs, and, occasionally, some of the bronchial glands, are transformed into a white substance, evidently of a cancerous character. The diseased parts are somewhat shining, sometimes of a firm consistence, and at others already softened, and always traversed by extremely small blood-vessels. When the softened parts are compressed, a liquid matter issues from a great number of points, bearing a strong resemblance to cream. This degeneration pursues the same course that other cancerous affections do, and resembles much in its intimate structure the cancerous masses which are sometimes developed in the liver, as well as the alterations which occur in the mucous membrane of the stomach, when this organ is affected with scirrhus."

The progress of cancerous consumption is very slow. At first, the respiration is somewhat obstructed, attended with a dry cough which is rarely very troublesome. As the disease advances, the patient begins to feel some pectoral oppression, the cough becomes more troublesome,



and the patient experiences, at times, transient pains in the chest. These pains gradually become more frequent and prolonged, until they are constant, at the same time that the cough becomes less dry, and a more or less abundant expectoration of white matter ensues. The skin is usually of a pale yellow color. This affection, says Bayle, seldom if ever occurs in persons under thirty years of age, and the majority of those who labor under it are at the same time affected with cancerous tumors in other parts of the body.

6. *Granular Consumption*.—In some cases of phthisis, the lungs contain an immense number of *transparent*, shining, miliary granulations. These granulations vary in size from that of a millet seed to that of a grain of wheat, and appear to be of a cartilaginous consistence. Mr. Bayle thinks that they differ entirely from miliary *tubercles*, which latter, he says, are always gray, or white and *opaque*, and terminate by complete softening. The miliary granulation, generally, at last, give rise to ulceration of the pulmonary parenchyma, and when this takes place, the ulcerated cavity is always found lined with an albumenoid membraniform substance.

7. *Tubercular or scrofulous Phthisis*.—This is a most fatal and unmanageable form of pulmonary consumption. In the commencement of the disease, slight aching pains, with a sense of tension or tightness, is experienced in some part of the chest, together with a short and dry cough, which is readily excited by muscular exertions. Respiration is shorter and more frequent, and deep inspiration is usually attended with a feeling of uneasiness and tightness in a particular part of the breast. These symptoms gradually become more conspicuous; and at length slight febrile irritation occurs towards evening, and the pulse and respiration continue to be somewhat accelerated throughout the whole day. A fit of coughing usually occurs in the morning, and the patient rises out of bed in a relaxed, languid, and feeble condition. An extreme liability to catarrh, on the slightest exposure to cold and damp air, exists. The bowels are usually somewhat torpid; the tongue is moist, often clean and of a pale pink-color, or covered with a thin white fur. By degrees the cough becomes more frequent and troublesome—particularly in the evening and morning, or at night on awaking from sleep. Great sensibility to low temperature is manifested by the patient. As the disease advances, the albuginea acquires a peculiar pearly whiteness; the skin, lips, tongue, and fauces, become dry in the afternoon, slight chills regularly occur about mid-day, followed by distinct febrile exacerbations, during which one or both cheeks are suffused with a circumscribed flush; a dry and burning heat is felt in the palms of the hands and the soles of the feet; the breathing is very quick and short, and the pulse very frequent, small, quick, and tense. These febrile paroxysms continue until towards midnight, when they terminate in more or less profuse perspiration, which continues till morning, leaving the patient exhausted, languid, and depressed. Previous to the occurrence of these latter irritative phenomena, the expectoration, which at first was scanty and frothy, becomes thicker and purulent, and *occasionally streaked with blood*. By degrees the sputa assume more and more the character of genuine pus; the evening exacerbations become more distinct, the

night sweats more profuse; the burning in the palms of the hands and soles of the feet more distressing; the cough more frequent and violent; and emaciation makes evident progress, attended with increasing failure of strength—in short *hectic* fever is now completely developed—the pulse being seldom less than 120 during the evening exacerbations, although generally languid, weak, soft, and not much above its natural frequency in the morning. Towards the unfavorable termination of the disease, œdema of the feet, and colliquative diarrhœa, almost invariably come on, accompanied with a weak and hoarse voice, often aphthæ in the fauces, difficulty of swallowing, and sometimes ulcerated throat. The mind generally continues to be unaffected to the last; but in some instances, “a degree of languid delirium occurs for some days, and occasionally total imbecility for a week previous to death.”

It is a remarkable circumstance, that pulmonary consumption is very generally suspended in its progress by pregnancy. As soon as the delivery of the child has taken place, the consumptive symptoms resume their force, and generally advance with rapidity to a fatal termination.

It is equally remarkable that the symptoms of pulmonary consumption occasionally, though indeed very rarely, alternate with mania.

Dr. Storer has published some interesting observations on the conversion of phthisis pulmonalis into inflammation of the brain. The cerebral affection usually commences with headache, which gradually increases, whilst the consumptive symptoms disappear very gradually, until delirium and finally fatal coma ensue. From one of the cases, which he has published, it would appear, that by subduing the disease of the brain, we may frequently put a permanent stop to the pulmonary affection. Dr. Abercrombie, also, has related several highly interesting cases of mania, and other forms of acute cerebral affection supervening on phthisis pulmonalis, with the speedy cessation of the symptoms of this affection. Similar instances are mentioned by Dr. Parry.

Tubercular consumption probably never occurs, except in individuals of a strumous diathesis; and it is doubtful, as Dr. Armstrong observes, whether tubercular matter be ever formed in the lungs, without a constitutional or hereditary predisposition to them. Be this as it may, it appears to be well ascertained, that wherever this predisposition does exist, any cause which is capable of irritating the lungs may give rise to the deposition of tubercular matter into their substance, and lead, consequently, to the development of phthisis pulmonalis. It has, however, been a subject of considerable controversy, whether inflammation is capable of causing the deposition of tubercular matter into the lungs. Bayle, Lacunec, Rostan, Louis, and Velpeau, are disposed to allow but little or no influence to inflammation in this respect; whilst Alison, Andral, Cruvilhier, and Broussais maintain that inflammation is frequently intimately concerned in the production of tubercular matter. The following observations of Andral, on this subject, are probably correct: “If the disposition to the formation of tubercles is very strong, then the slightest local congestion of blood is sufficient to give occasion to it; if this disposition is less strong, it is requisite, for the formation of tubercular matter, that the congestion of blood should be so considerable, and so permanent, as to amount to inflammation. But, when there exists no

such predisposition, the most intense, and the longest continued inflammation, will not produce a tubercle." Tubercular matter would seem to be formed by a kind of exudation or secretion into the pulmonary tissue; and as it appears to be unmorguized, may be regarded as an extraneous substance, obstructing the pulmonary circulation, and giving rise to more or less local irritation. Tubercular depositions in the lungs do not, however, inevitably lead to consumption; for it would seem to be well ascertained, that tubercles may exist in the pulmonary structure *in a dormant state*—that is without entering into the process of softening, or exciting inflammation—and without giving rise either to local inconvenience, or general disturbance of health. In individuals of a scrofulous habit, the formation of tubercles is sometimes very rapid, when pulmonary irritations is excited by any accidental irritating cause. In the beginning, tubercles have the appearance of semi-transparent grains; and as they gradually increase in size, they become united into regular masses, and assume a yellowish and opaque appearance. M. Laennec asserts, that the conversion of the tubercular matter into a soft pus-like fluid, is not effected in a manner similar to what takes place in suppurative inflammation; but by a peculiar process of softening, wholly distinct from suppuration. The softening commences in the centre of the tubercle, and gradually proceeds outwards, until the whole mass is converted into a whitish cream-like matter, which, making its way into the bronchial tubes, is discharged by expectoration, leaving a kind of fistulous cavity. These tubercular excavations become lined with "a species of morbid membrane, of a white and opaque appearance, and very soft consistence; external to which, another membrane of a semi-cartilaginous structure is formed. Bayle thinks, that the *pus* expectorated in scrofulous consumption is secreted chiefly by the lining membrane of the tubercular cavities; but Laennec asserts, that the greater part of the purulent matter expectorated proceeds from the mucous membrane of the bronchia, which always suffers irritation and chronic inflammation, to a greater or less extent, in every variety of pulmonary consumption. Purulent expectoration from this source occurs in some instances of tubercular lungs, even before the tubercles have undergone the process of softening. Every case of tubercular phthisis, consists therefore of at least two, and sometimes three, simultaneous processes; namely, 1. "the proper tubercular action either in a state of growth or increase, or in that of softening or destruction; 2. of a degree of chronic inflammation of the mucous membrane of the bronchia; and 3. sometimes of inflammation of the pulmonic tissue, of a chronic character, and tending to hepatisation."

*Causes.*—As has already been stated, persons may be decidedly predisposed to phthisis, and even affected with a tubercular state of the lungs, and yet escape the disease, if no adequate exciting cause supervene to rouse it into action. In some instances, functional or organic diseases of the liver develop the disease where the predisposition exists. Catarrhal affections, however, are by far the most common exciting causes of the disease. The tubercles may also be excited into action by a fixed irritation located in any of the principal viscera, more especially in the alimentary canal. Repelled cutaneous eruptions have

a strong tendency to develop the tubercular action, as indeed all other morbid impressions on the skin have in subjects of a phthisical habit. The sympathy between the external surface and the lungs is intimate and strong, and an irritation seated in the former, seldom fails to manifest itself in the latter organ—more especially when the lungs are in a state of habitual debility or predisposition to morbid action. It is on this account, that phthisis pulmonalis is so common a disease in cold and variable climates, where the cutaneous function is so liable to sudden and frequent interruptions or variations of activity. Among the ordinary exciting causes of this affection, we may also mention the healing up of old discharging sores; atmospheric vicissitudes; the abuse of mercury; intemperance in the use of spirituous liquors; sedentary occupations; excessive venereal indulgence, and onanism; copious losses of blood; the depressing passions; the admission of irritating vapors or fine particles into the lungs—to which latter cause, stone-cutters, glass-grinders, millers, needle-grinders, &c. are particularly exposed.

*Prognosis.*—The different varieties of pulmonary disease mentioned above, vary very considerably in the degree of sanability, peculiar to them respectively. That form of consumptive disease, which depends upon chronic bronchial inflammation, is by far the most under the control of judicious remediate treatment; and where the mucous tissue remains free from ulceration, or the subjacent pulmonic structure has not become consolidated, recoveries are by no means uncommon.

*Laryngeal and tracheal consumptions* are extremely dangerous affections. Cases of recovery have, however, been related by authors, of this variety, but the number of such instances is very limited.

Consumption from chronic pleuritis, is much more difficult of cure than that which depends on chronic inflammation of the mucous membrane of the lungs; yet in some instances, the disease subsides, and the patient regains a considerable degree of health. When a cure is effected, the effused fluid is either gradually absorbed while the lung expands, or it is discharged through the lungs by an opening into the bronchial tubes from the cavity of the pleura, or it escapes externally by an opening into the cavity of the chest through the intercostal spaces.

*Tubercular consumption* may be regarded as an incurable disease; for tubercular matter, so far as we know, is wholly incapable of being absorbed or otherwise removed. “Previously to the knowledge of the true character and mode of development of tubercles,” says Laennec, “and while consumption was considered as a consequence of chronic inflammation, and slow suppuration of the pulmonary tissue, medical men did not question the possibility of curing this disease by a suitable mode of treatment, especially if taken in time, and during the first stage. It is now, however, the general opinion of all those who are acquainted with the actual state of our knowledge respecting the pathology of diseases, that the tubercular affection, like cancer, is absolutely incurable, inasmuch as nature’s efforts towards effecting a cure are injurious, and those of art useless.” However impossible it may be to remove tuber-



cular matter when once formed, or to cure consumption depending on it, there can exist no doubt that we may occasionally so retard, or even arrest its progress by proper management, as to prolong life to a very considerable extent. Nay, it is equally certain, that by carefully avoiding those causes which tend to favor the conversion of tubercular matter into a pus-like fluid, persons who are manifestly strumous, or affected with incipient tubercles in the lungs, may pass through a long life without the actual development of consumptive symptoms.

*Treatment.*—In consumptive habits, every thing which tends to irritate the system, more especially the respiratory organs, should be carefully avoided. Attention ought, above all, to be directed to the regular maintenance of the perspiratory function; and with this view, the patient should be directed to wear flannel next his skin; to protect himself by proper clothing against the influence of low temperature; and to avoid, as much as his circumstances may admit, the effects of atmospheric vicissitudes. In the incipient stage of every variety of pulmonary consumption, our constant object should be to counteract the inflammatory tendency of the system, and to remove all sources of irritation. In general, vegetable and farinaceous diet, with milk, is the proper nourishment for a patient laboring under incipient phthisis. The system in all phthisical habits is peculiarly excitable, and readily thrown into a state of general and injurious irritation by even weak exciting causes. It would be in vain to expect a reduction of the local pulmonary irritation, so long as the system generally is in a state of preternatural excitation. In conjunction with a mild, nonirritating diet, the wearing of flannel next the skin, and the careful avoidance of inclement and variable weather, gentle exercise, when the air is mild and uniform, will tend to invigorate the system, and lessen its morbid irritability.

Unquestionably, the most efficient of all measures for counteracting the tendency to consumption of whatever grade, or arresting its development or progress is thorough and frequent courses of medicine with the proper intermediate tonic treatment. This plan should ever be put in requisition in the incipient stages of the disease. The cutaneous functions derive salutary benefit by the frequent use of the vapor bath, followed by frictions with a dry flannel. The good effect of the operation seems to depend on its power of lessening the activity of the heart and arteries, and thereby moderating the momentum of the circulation, and consequently the general and local irritated condition of the malady. The frequent employment of stimulating liniments to the chest or over the region of the disease, is highly recommended. The use of the emetics or full courses must be persisted in every second or third day, to obtain the full benefit of their therapeutic agency. The strength and tests of experience must not be disputed upon this subject. If any advantage whatever can be derived from remediate attention, the evidence of the superiority of this plan is sufficiently attested in the botanic journals of our country.

Composition, capsicum and the expectorants must be intermediately and discriminately given. Lobelia in broken doses either alone or combined with other expectorant mixtures will be very serviceable. The

judicious practitioner will always be on his guard against relapses, and on their slightest premonition, full courses must be promptly applied.

The adoption of this course frequently arrests the progress of the disease, when it has been considered advanced and hopeless, and restored the patient comparatively to a comfortable share of health.

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### CACHEXY, OR DIRT-EATING.

THIS disease, known by the name of *mal d'estomac* among the French, and by that of dirt-eating in our West India colonies, is frequently to be met with among negroes, but more particularly those imported from Africa. Mons. Sonnini makes mention, in his *Travels through Egypt*, that a propensity for earth is a disease frequently to be met with likewise among the Egyptians. Between it and chlorosis there is, in many respects, a great similarity; but they differ in this circumstance, that the latter only affects females and that principally about the age at which menstruation ought to commence; whereas the former affects males as well as females, and is often to be met with in children of six or seven years old.

This disease evidently arises from a want of due energy or vigor in the system. With some the disease is, however, constitutional, and proceeds from general relaxation, a vitiated state of the stomach, and bad digestion. Negroes imported from the coast of Africa, who are of an inactive indolent habit, and children of lax fibres, and who have been badly nursed and afterwards neglected are most liable to its attacks.

The malady shows itself by a fondness for solitude, and an indulgence in grief and despondency, together with the loss of appetite, constant pain in the stomach, difficulty of breathing upon the least bodily exertion, paleness of the face and palms of the hands, whiteness of the tongue, with an appearance like stains of ink upon it, paleness of the lips, drowsiness, inactivity, unwillingness to attempt to perform motion, and general debility. The tunica adnata is of a glassy whiteness, the skin of an olive complexion and cold to the touch; the eyelids, face, and extremities, show evident signs of an extravasation of water in their cellular membrane; and the unhappy sufferer can only breathe in an erect posture, from water being likewise collected in the chest and cavity of the abdomen. The stools are at the same time of a white or clay color, the urine is scanty and the pulse is always small, and generally becomes quicker as the night approaches.

In consequence of the vitiated state of the gastric juice and impaired digestion, a morbid acidity prevails; and a symptom arises from this cause, which with some has given name to the disease, viz: a habit of eating dirt, chalk, or whatever will obtund acrimony.

This vitiated action is propagated throughout the whole alimentary canal; the lacteals are abraded by acrimonious fluids, and no longer possess the power of absorbing healthy chyle; hence the lymphatic glands become indurated and inflamed; the liver also is enlarged and of

a scirrhus hardness; the blood, poor, rapid, and colorless; no longer stimulates the heart and arteries to action; hence asphyxia and sudden death.

Fatal consequences usually attend this disease. On dissection the stomach is often found much enlarged and thickened in its coats; the liver is of an increased size, scirrhus, and always preternaturally white; biliary concretions are sometimes met with in the gall-bladder; the bile is never of a healthy appearance, but usually of a thin, watery consistence, and of a slightly yellow or fresh color; the mesenteric glands are indurated and scirrhus, and polypon concretions are occasionally found in the heart.

*Treatment.*—Thorough courses of medicine with the proper vegetable bitters, with which should be compounded a liberal quantity of aromatics. A generous diet, moderate exercise, warm clothing, frictions and frequent steamings will be necessary.

When costiveness prevails, it ought to be removed by bitter root, black and capsicum, to which may be added, ginger, mace, cloves or any of the stomachics.

If the disease has been of such standing as to be attended with anasarcons swellings besides using the means already mentioned, we must have recourse to diuretics, as advised in dropsy.

Whenever it is accompanied by a retention of the monthly turns in females, we must promote the return of these by calling in the aid of emmenagogues.

A positive restraint should be placed upon the morbid inclination of the patient's appetite in craving dirt; and when he goes out for exercise, an attendant should accompany him to prevent his eating it.

## CACHEXIA APIITHOSA, OR CHRONIC THRUSH.

Chronic thrush is a disease very frequently to be met with among the inhabitants of our West India colonies, but which is likewise apt to prevail in those northern countries where the cold is combined with a considerable degree of moisture, or where the soil is of a very marshy nature. It may in some cases be considered as an idiopathic affection, but it is more usually symptomatic. It is dependent on a cachectic state of the whole system, characterized by ulceration of the month, tongue, fauces, and intestinal canal.

It shows itself at first by an uneasy sensation or burning heat in the stomach, which comes on by slow degrees, and increases gradually in violence. After some time, small pimples, of about the size of a pin's head, appear on the tip and edges of the tongue, and these at length spread over the whole inside of the mouth, and occasion such a tenderness and rawness of the parts, that the patient cannot take any food of a solid nature; neither can he receive any vinous or spirituous liquor into his mouth without great pungency and pain being excited; little febrile

heat attends, although there is some thirst, but the skin is always remarkably dry, rough, and without the least moisture on it; the countenance is of a pale olive color, the pulse is smaller and more languid than in health, general coldness is felt over the whole body, but more particularly in the extremities, and the urine is small in quantity, and sometimes exhibits a milky or wheyish turbidness.

These symptoms will continue probably for some weeks, the general health being sometimes better and sometimes worse, and then the patient will be attacked with acid eructations, and a vomiting of acrid phlegm, as likewise with a severe purging, which greatly exhausts his strength, and produces considerable emaciation of the whole body. The stools indicate a defective biliary secretion, strongly resembling thick oatmeal gruel in an incipient state of fermentation; but there is no pain or enlargement of the liver, nor jaundice, although the complexion is somewhat of the olive color. After a little time the symptoms cease, and he again enjoys better health; but sooner or later the acrid matter shows itself once more in the mouth, with greater virulence than before, and makes frequent translations to the stomach and intestines, and so from these to the mouth again, until at last the patient is reduced to a perfect skeleton. Death in its approach still lingers, and seems as it were unwilling to overtake its languid victim, until, worn down with fatigue and inquietude, he sinks into a state of exhausted apathy, and life at length it extinguished.

General relaxation, exposure to cold combined with great moisture, obstructed perspiration, and an acrimony of the humors, are supposed to be the causes which give rise to the chronic thrush. Elderly people and persons with a shattered constitution are most liable to its attacks.

It often admits of palliation from the resources of medicine, but it is seldom cured, even at an early stage of the disease. When engendered beneath the influence of a tropical sun, or it has been neglected, is of long standing, or has made its attack in an advanced period of life, it will terminate fatally.

The principal appearances to be observed on dissection are the aphthæ, which extend through the whole of the alimentary canal. The muscles throughout the body are relaxed and flaccid, and their connecting cellular membrane is divested of any fat.

*Treatment.*—It will in all cases be advisable to begin the cure with giving courses of medicine, to dislodge the acrid phlegm with which the stomach is usually loaded; and if any acidity prevails afterwards, (which may be known by sour belchings attended with a degree of heat and pain,) a little magnesia, combined with laxative medicine will be necessary. Clysters, also, will be found serviceable.

Should diarrhœa supervene, recourse must be had to medicine to counteract its tendency.

With a view of determining the humors to the surface, composition and other diaphoretic agents should be used.

The mouth and tongue should be frequently washed with a strong vegetable astringent, such as bayberry and sage, or an infusion of the



raspberry and hazel; these should be sweetened with loaf sugar or honey.

The diet should consist of such things as are mild, light and nutritive.

It will be best to abstain from all wines, spirits, and fermented liquors.

The tonic bitters should be given to restore the strength of the digestion; and the patient directed to take such exercise in the open air as his strength will admit.

## CORPULENCE.

CORPULENCE, when it arrives at a certain height, becomes an absolute disease. The increase of the omentum particularly, and the accumulation of fat about the kidneys and mesentery, swell the abdomen, and obstruct the motions of the diaphragm; whence one reason of the difficulty of breathing, which is peculiar to corpulent people: while the heart and large vessels connected therewith are in like manner so encumbered, that neither the systaltic nor subsultory motion can be performed with sufficient freedom, whence weakness and slowness of the pulse; but when the whole habit is in a manner overwhelmed with an oily fluid, the enlargement of the cellular interstices will necessarily interrupt the general distribution and circulation throughout the nervous and vascular systems, impeding the action of muscular fibres, and producing insensibility, somnolency, a disposition to apoplexy, and death.

The general exciting cause of obesity, independent of peculiarity of habit, is certainly a free indulgence of the appetite in the use of very nutritive food and fermented liquors, conjoined with an inactive life; since it is only among those who enjoy the means of obtaining the comforts of life without hard labor that this state is observed. The citizen in easy circumstances, the indolent rector, the opulent farmer (and especially their wives, who enjoy their feeding without anxiety or much exercise,) the masters and mistresses of well-frequented inns, and the sergeants of regiments in peaceable quarters, or of the militia, &c., are those whose rotundity of belly marks the superabundance of their ingesta, and who upon the least exertion perspire and wheeze under a load with which they have voluntary encumbered themselves.

When a person of a constitution which is predisposed to obesity is enabled to indulge in good feeding, leads a calm indolent life, free from mental iniquitude, and sleeps much, corpulence generally ensues. The causes of corpulence being thus well understood, the means of prevention and removal are not less obvious: in this the patient must, in a great degree, minister to himself; the prevention and cure will depend upon the proper regulation of his diet, exercise, and sleep. Medicine will only be necessary to obviate particular symptoms, or diseases arising from or connected with it.

The disease frequently, however, steals on so imperceptibly, that it

becomes inveterate before people begin to think of pursuing any means for obviating it.

To get rid of too much fat without any injury to the constitution, the patient should in a very gradual manner diminish the usual quantity of his aliment, taking less nutritious substances for food; he should drink as little as he can with ease to his sensations, and particularly of malt liquors; he should use regular and daily active exercise, abstain from suppers, take short rest, sleep but few hours, and rise early every morning. To assist these means, and compress the bowels (increasing their absorption probably thereby,) he may put a proper bandage round the belly, so that it can be tightened or relaxed with ease. An under waistcoat, with two or three rows of buttons, will answer this purpose very well. By a rigid pursuance of these means for a due length of time, the most corpulent and unwieldy man or woman may by perseverance be reduced within moderate bounds; with an acquisition of health, strength, and vigor, both of body and mind.

To the question proposed to a person well versed in the business of training, "Would he recommend a similar process to reduce corpulency in other people, whether male or female?" the answer was in the affirmative, as he had *perceived from experience* that the constitution does not appear to be injured by it. It will, however, be most prudent in all cases to reduce obesity in a gradual manner, which may be done effectually by keeping the eyes open, the mouth shut, and the legs in motion; or in other words, by eating and drinking sparingly, by sleeping little, and taking much active exercise.

As medicines, diaphoretics, with an occasional use of moderate purging, have been employed. Soap is recommended to melt down and facilitate the absorption of the fat in corpulent people; but probably the potassæ subcarbonas would be more powerful. Diuretics might possibly be used with advantage.

Vinegar and lemon-juice are too frequently used by young women to reduce corpulence; but an excessive use of acids is apt to destroy the digestive powers, and in the end to bring on a train of dyspeptic complaints.

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## EMPHYSEMA, OR FLATULENT SWELLINGS.

THIS disease consists in a collection of air in the cellular membrane. In general it is confined to one place; but in a few cases it spreads universally over the whole body, and occasions a considerable degree of swelling.

It sometimes arises spontaneously, which is, however, a rare occurrence, or comes on immediately after delivery, without any evident cause; but it is most generally induced by some wound or injury done to the *thorax*, and that affects the lungs; in which case, the air passes

from these through the wound into the surrounding cellular membrane, and from thence spreads sometimes over the whole body.

Emphysema is attended with an evident crackling noise, and elasticity upon pressure; and sometimes with much difficulty of breathing, oppression, and anxiety.

We are to consider it as a disease by no means inattended by danger; but more probably from the causes which give rise to it, than any hazard from the complaint itself.

*Treatment.*—Great difficulty of breathing and anxiety are relieved by the use of No. 6 and composition; and the pain and uneasiness arising from the distension by vapor baths and emetics.

### TYMPANITES, OR TYMPANY.

TYMPANY consists in a violent distension either of the intestines, or cavity of the abdomen, by wind. In the former instance it has been supposed to arise from the sudden suppression of diarrhoea, or dysentery, or as a consequence of febrile diseases, or the sudden drying up of long-continued discharges; from cutaneous eruptions, or a use of crude vegetable aliment; and in the latter from an erosion of the intestines, the effect also of preceding complaints.

Tympanites of the intestines sometimes comes on suddenly, at others it is more slow in its progress, and preceded (be the cause what it may) by great flatulency, and a frequent expulsion of air upwards and downwards, attended with colic pains. As it advances, the abdomen becomes considerably distended, and retains the same figure under every variation of position. The swelling does not yield much to pressure, and in what it does, it soon recovers its former state; it feels very elastic, but no fluctuation can be perceived. The urine at first is not altered either in quantity or quality; but in the advanced stage of the disease a change takes place in both respects, and pain and even stoppage sometimes comes on. The body is usually very costive, the appetite is impaired, thirst, heat, and pyrexia attend, and general emaciation ensues.

In time the respiration becomes difficult, with much anxiety and cough; the strength is exhausted, the belly is enormously swelled, and the patient is not unfrequently destroyed in consequence of supervening gangrene.

In this disease the swelling is more equal than in the former species, the tension greater; it is more elastic, and, upon percussion, sounds like a drum or bladder filled with air. Moreover, there are no discharges of flatus.

Tympanites is easily to be distinguished from ascites by the absence of fluctuation, by the tense feel of the abdomen, by their quick reaction of the parts after removing the pressure of the finger, by the fre-

quent desire to belch, and by the state of the bowels and urine at the commencement of the disease.

It is, almost in every instance, an obstinate and dangerous disease, slow in its symptoms, marking a total relaxation of the system; and therefore it frequently terminates in dropsy, showing the same emaciation of countenance, dry cough, and hectic state, in the end. An unimpaired constitution with frequent explosions of flatus, showing that the air is contained within the intestines, may be regarded in a favorable light.

*Treatment.*—Pepper tea is one of the most powerful remediate agents for this complaint that can be given. The spice bitters combining a good share of carminatives must be regarded essential in the restoration of the tone and activity of the digestive functions.

When costiveness prevails much benefit will be experienced by the frequent use of the syringe.

If the disease does not readily yield to these measures, several full courses should be given, in quick succession (daily at least) and the tonic treatment again resumed.

## HYDROPS, OR DROPSY.

DROPSY, or rather the effused and accumulated fluid which constitutes the most conspicuous external character of this disease, must be regarded only as an *effect* of a primary morbid condition of the solids. This morbid condition of the solids constitutes the essential malady, to which the physician's attention must be directed in order to obtain rational views concerning its nature and remediate management. The cure of this disease does not depend merely on the removal or evacuation of the aqueous accumulation, but principally, if indeed not entirely, on the removal of that disordered state of the vascular system, upon which the dropsical collection depends. Here, then, the fundamental question meets us: In what does this morbid condition of the solids consist, and in what particular structure is it chiefly located? According to the late Dr. Rush, the morbid action which gives rise to dropsical accumulations, is seated in the arterial system, and is, in its nature, closely allied to inflammation. Dropsical accumulations, agreeably to his views, are the result of an increased action of the exhalent vessels, attended with a general pyrexial condition of the system. The correctness of this doctrine is now very generally, we might, perhaps say, universally admitted. Indeed, the removal of dropsy from the cachexia to the pyrexia, is justly regarded as one of the most important of modern improvements in pathology. That the increased secretion or effusion of serum, which occurs in dropsy, depends on a condition, which, if not identical, is at least closely allied to inflammation, receives the greatest degree of probability from the following circumstances:

Every one who has observed the progress of inflammation, knows that



at the period when the inflammation is passing off, or changing to the subacute or chronic state, an effusion of serum is apt to occur into the surrounding cellular tissue or contiguous cavities. Thus, rheumatic inflammation, gout, and sprains, frequently pass off by an effusion of serum into the circumjacent cellular structure. It is well known, too, that hydrothorax is by no means an uncommon sequel of pleuritis; and hydrocephalus of arachnitis. Indeed, the pathological fact, that all inflammations of the serous membranes, if not very violent, or speedily terminated in resolution, end in effusion, is directly corroborative of the correctness of this view of the pathology of dropsy. It is therefore highly probable, that the morbid action which exists in the tissues from which the dropsical effusions occur, partakes more or less of the nature of inflammatory excitement; but it seems likely, that it is always of the lowest grade of phlogosis, amounting, in some instances, probably, only to an irritation bordering on actual inflammation. It would appear, indeed, that a *considerable* degree of inflammation is incompatible with serous exhalation—and that this effect can occur to any material extent, only where the vascular irritation is somewhat below the grade of actual inflammation.

To this doctrine of the nature of dropsy, objections of much plausibility have been urged. When duly estimated, however, they do not appear to possess any solid value. It has been stated, for instance, that dropsy is not unfrequently the consequence of profuse hæmorrhage and of other exhausting causes, and that in such cases, at least, neither the general symptoms, nor the nature of the causes, justify us in considering the disease as one of an inflammatory character. Against this, however, it may be observed, that local irritative or inflammatory action, and great debility and exhaustion, are by no means incompatible. Sub-inflammation may exist in one structure or organ, whilst the general system exhibits all the characteristic traits of debility and cachexy. The post mortem phenomena which occur in the human subject, and in animals who have died from hæmorrhage, would seem to show, indeed, that even in dropsies from hæmorrhage, there exists a morbid state, allied to inflammation in the membranous structures from which the effusion occurs. The experiments of Mr. Seeds and of Kellie, show that in animals bled to death, the meninges of the brain, and other membranous tissues, almost invariably exhibit a highly injected and congested state, similar, in all respects, to what occurs in actual inflammation. In many instances of this kind, a considerable quantity of watery effusion was found within the head; and in some instances, high and tumultuous action of the heart and arteries occurred shortly before the animals expired. The phlogistic character of dropsy is sometimes strikingly illustrated by the conversion of inflammatory diseases into dropsy, and vice versa. In a late number of the *Medico-Chirurgical Journal*, there is a case related, in which the rheumatism was successfully converted into dysentery, erysipelas, peritonitis, and finally, dropsy.

Although it must be admitted, that *increased exhalation of serum* constitutes the chief immediate cause of dropsical accumulations, yet it is probable that there always exists a simultaneous *diminution* of absorption in the surface from which the effusion takes place. In the first

place, it may be observed, that vascular irritative excitement or inflammation in a part, is necessarily attended with a preternatural afflux, and consequently, sanguineous congestion in such part. This being the case, it follows, that the capillaries of the structures from which dropsical effusion occurs, must be in a state of repletion or sanguineous congestion. Now, it is a truth, well established, that the function of absorption from the cavities and cellular tissue, is chiefly, if not entirely, performed by the venous extremities. The experiments of Majendie, of Meckel, of Tiedemann, and Gmelin, have placed this physiological fact beyond all reasonable doubt. It appears, moreover, to be equally well established that the process of absorption is accelerated or diminished, according as the capillaries contain a lesser or greater quantity of blood. When they are full and congested, and the current of blood moves along sluggishly, absorption is comparatively slow; and vice versa. This fact was long ago noticed by Home in his Essay on Croup. "The less blood," he says, "there is in the veins, the more rapidly will absorption be effected." When it is considered, therefore, that the tissues from which the dropsical effusions occur, are, as is believed, in a state of sub-inflammatory action, or at least of vascular irritation, and that the capillaries of these tissues must consequently be in a state of fullness or congestion, it would seem to follow, that the process of absorption must be correspondingly diminished. Hence, in every case of dropsy there are, probably, two simultaneous morbid conditions present, namely, *increased exhalation and decreased absorption.*

*Etiology.*—The principal occasional causes of dropsy are mechanical obstructions to the free return of blood to the heart; the influence of cold; excessive hæmorrhages; disease and inactivity of the kidneys; repelled cutaneous eruptions; suppressed habitual discharges; chronic diseases which tend to exhaust the system; arsenic; and some of the acute exanthematous affections, particularly scarlatina and measles. Dr. Ayre, in his treatise on this disease, denies that mechanical obstruction ever has any direct agency in the production of hydropic effusions. When dropsy supervenes on scirrhus of the liver, he considers it the consequence of the slow inflammation of the indurated viscus, extending to its peritoneal covering, and thence along the abdominal peritoneum. It is not improbable that the disease may, in some instances, be developed in this way; but it seems much more likely that the congestion which necessarily occurs in the portal system in such cases, produces, by degrees, that irritated condition of the peritoneal capillaries which gives rise to the effusion. It is a well established fact, that habitual sanguineous congestion in a part, tends ultimately to excite a low degree of inflammation. We may reasonably presume, also, from the above observations on the influence of vascular turgescence in diminishing absorptions, that this process is in such cases morbidly diminished, even before capillary irritation and consequent preternatural exhalation have commenced. The influence of obstructions to the return of blood to the heart, in producing serous extravasations, is sufficiently illustrated by the œdema which occurs when ligatures are passed round an extremity.

*Cold* rarely produces hydropic affections, unless there exists a predis-

position to the disease. Of all the causes which predispose to the occurrence of dropsy from the influence of cold, the most powerful are scarlatina, measles, and the mercurial excitement. Neither these two exanthematous affections, nor mercury, are apt to give rise to dropsy, unless they co-operate with cold, or vicissitudes of atmospheric temperature. They leave the surface of the body in a highly sensible and irritable condition, and the cutaneous exhalation is usually carried on freely during the period of convalescence. When the body, in this condition, is exposed to the influence of cold, the cuticular exhalents are peculiarly liable to become torpid; and congestion in the capillaries of the subjacent cellular tissue almost necessarily ensues. This tissue being already predisposed to morbid excitement from the previous exanthematous affection, passes readily, under the combined influence of these circumstances, into a state of irritation or sub-inflammatory action, whence dropsical effusions proceed. It is not improbable, however, that in some instances of dropsy from scarlatina or measles, the disease may be the immediate consequence of the extension of the inflammation or irritation from the skin to the subsequent cellular texture. The fact, however, that dropsy from these affections occurs but very rarely when the patient is carefully protected from cold, would seem to show that the disease is not apt to arise from an extension of the inflammation to the cellular tissue.

In relation to dropsies from excessive hæmorrhages, or other profuse and long-continued discharges, we have two observations to make, in elucidation of their etiology. In the first place, it would seem to be well established, that excessive losses of blood are almost invariably attended, or immediately followed, by irregular determinations of congestion in one or more of the serous membranes. It is thus that the red and injected appearance of the arachnoid and other membranous structures occurs in animals, when killed by bleeding. The structures which may have thus become the centre of determination, gradually pass into a state of irritated action, which ultimately, in most instances, give rise to dropsical effusions. There is, however, another circumstance connected with the production of dropsy by excessive losses of blood, which, though little estimated by pathologists, has an important concern in the causation of the disease. It has been observed above, that immediately after a profuse loss of blood, absorption goes on with unusual activity. The blood-vessels are rapidly replenished with crude fluids; for the absorbents being extremely active, nearly all the aqueous fluids, received into the stomach, are speedily absorbed into the circulation; and this is especially favored by the very great thirst which almost always occurs after excessive sanguineous losses. The blood being thus inordinately supplied with a crude and watery fluid, becomes more irritating to the heart and capillaries, and diluted to such a degree as to pass off more readily by the exhalents. That this is not a hypothetical view of the subject, is shown by the experiments of Harles and Schulze, both of whom rendered animals hydropic by drenching them copiously with water, after they had abstracted from them large quantities of blood. Haller also bears testimony to the fact, that copious hæmorrhages produce an increase of serous fluid in the blood.

Dropsy from hæmorrhage is generally of the anasarca kind. The blood, in these cases, always contains a very great over-proportion of serum, the crassamentum being very small, usually cupped, and often covered with a buffy coat. The pulse is frequently full and active, though not hard or tense. Dropsical effusions from hæmorrhage, rarely supervene immediately after the loss of the blood. Several weeks usually intervene between the hæmorrhage and the occurrence of the dropsical swellings.

Diseases or torpor of the kidneys, is another, though not a very common cause of dropsy. Dr. Bright has recently published some interesting cases of this kind. In nearly all these instances, the kidneys were found in a state of disorganization. In dropsies depending on deficient urinary secretion from renal torpor or organic disease, the urine invariably contains a portion of albuminous matter.

Among the causes of dropsical effusions, we may also mention defective menstruation, diabetes, chronic gout, the intemperate and habitual use of spirituous liquors, and, in short, almost every chronic affection or cause which is capable of exhausting the constitution, or causing important functional lesions.

*General symptoms.*—A dry and harsh skin is almost universally present. The appetite is usually impaired—but when the disease is the consequence of hæmorrhage, the appetite for food is sometimes particularly strong. The thirst is generally considerable, and sometimes very urgent. The bowels are commonly inactive, though readily moved by laxatives. The pulse is irritated, and usually indicative of a pyrexial state of the system; for however small and febrile, it is almost always quick and frequent. The urine is scanty, and generally of a deep red color; sometimes mixed, and occasionally, though rarely, whey-like or chylous.

In a diagnostic point of view, much attention has of late years been paid to the appearance and character of the urine. Dr. Blackall has investigated this subject with minute attention; and the observations of Ayre and Wells, have thrown further light on it. The circumstance which has particularly occupied the attention of these physicians, in relation to this subject, is the absence or presence of coagulable matter or serum in the urine of hydropic patients. In many instances of this disease, a greater or less proportion of coagulable serum exists in the urine; whilst in others this excretion is wholly devoid of coagulable matter. Observation would seem to show, that this occurrence is intimately connected with the general state of the system; for it would appear that in those cases of dropsy which are attended with an obvious phlogistic diathesis, and especially such as arise from the influence of general causes, the urine, with scarcely an exception, contains a large quantity of coagulable serum. The quantity of serum mixed with the urine, may therefore be regarded as a pretty correct index of the degree of general inflammatory excitement attending the disease. Serous urine may be considered as a kind of *pyreximeter* in hydropic affections, which, though not universally to be relied on, is yet sufficiently constant to entitle it to the attention of the practitioner. Considerable attention to this subject has satisfactorily proven, that in almost every in-



stance where there is copious serum in the urine of dropsical patients, the general condition of the system will be found manifestly phlogistic. In the dropsies which occur after scarlatina, the urine generally contains a large portion of serum; whilst in local dropsies, and in which the general vascular system does not participate, little or no serum is detected in the urine. When the urine is high-colored, scanty, and, on cooling, deposits a red sediment, or remains muddy, the liver, probably, is in a state of organic disease.

After all, it is highly probable, from what is said above, that every case of dropsy is essentially phlogistic, so far at least as relates to the immediate local excitement which gives rise to the effusion. The general system, however, does not always participate in the local affection—the heart and arteries receiving no sympathetic impulse from the local, irritated, or sub-inflammatory action. In such cases, the general circulation is languid, and debility and relaxation characterise the disease. Where the heart and arteries do sympathise with the local hydropic affection, and this is by far most commonly the case, the pulse will manifest more or less of a pyrexial state, being sometimes full, hard, and active, or small, tense, quick, and frequent.

1. *Ascites.*—*Dropsy in the Cavity of the Abdomen.*—Ascites, or abdominal dropsy, is very generally dependent on visceral induration, more especially on scirrhus of the liver or spleen. Whatever, therefore, has a tendency to produce induration of these viscera, may become the remote cause of this form of dropsy. Among the most common and powerful of these causes, may be ranked the habitual and intemperate use of alcoholic liquor; protracted agues; hepatitis, and inveterate dyspepsia. Whatever may be the remote cause of ascites, however, *chronic inflammation of the peritoneum* constitutes, no doubt, the immediate and essential cause of the abdominal effusion. Sub-acute inflammation of this membrane, in whatever way it may be produced, terminates, perhaps, always in effusion; although in some instances, this may not be so copious as to constitute dropsy. In the majority of fatal cases of ascites, the peritoneum exhibits a highly injected state; and in many instances, the trace of previous inflammation are still more conspicuous and unequivocal, its structure being either thickened and otherwise altered, or covered with an infinitude of miliary tubercles. Occasionally, indeed, no marks of pre-existing inflammation whatever, are to be seen; but the investigations of modern pathologists have rendered it abundantly manifest, that where no disorganization or structural change has been effected, the mere redness, or injected state of inflamed parts, may and does often disappear on the approach of death and afterwards.

Besides the causes just mentioned, it will be sufficient to observe, that every thing which is capable of producing slow inflammation of the peritoneal lining of the abdominal cavity, may give rise to this variety of dropsy—such as cold; putridition; blows on the stomach; enteritis; metastasis of cutaneous eruptions; gout, or rheumatism; suppressed habitual discharges, and infarcted bowels.

*Diagnosis.*—The only condition which is likely to be mistaken for ascites, is pregnancy. From this state it may be distinguished by the fluct-

tuation; the uniformity of the tumor; the lateral pressure and distension of the abdomen on lying on the back; the oppression of breathing on lying down, so as to raise the pelvis and abdomen higher than the chest; the thirst; the paucity of the urine; the dryness of the skin; which characterize effusion into the abdomen. And, on the other hand, the absence of the peculiar symptoms of pregnancy, assist us in forming a correct diagnosis.

When the dropsical accumulation becomes very great, much uneasiness and general disturbance in the system arise from the mechanical irritation which it causes by its pressure on the organs and parietes of the abdomen. Respiration becomes short and anxious; the stomach will admit of but small quantities of drink or food; the fibres of the abdominal muscles yield, and the whole abdomen becomes sore and tender to the touch, and a dry and short cough generally comes on in the advanced stage of the disease. Ascites is very rarely wholly unconnected with anasarca swellings. Ultimately, œdema of the feet and legs, if not more diffused cellular effusion ensues. The urine is much more apt to be very high-colored and sedimentous in ascites than in the other forms of dropsy. The bowels too, are more torpid, especially in aggravated cases.

2. *Hydrothorax*.—*Dropsy of the Chest*.—Hydrothorax generally supervenes gradually, without causing, in its initial period, any particular inconveniences or disturbance calculated to excite much attention or suspicion of the true nature of the malady. At length, however, the patient begins to experience a sense of oppression and tightness at the lower part of the breast bone, with slight difficulty of breathing when at rest and in an erect posture. He now finds, that on lying down, or using active bodily exertion, especially on ascending an acclivity or stairs, the difficulty of breathing and sense of suffocation are greatly increased. When recumbent in bed, he raises his head and shoulders high by means of pillows, which, by diminishing the pressure of the effused fluid on the lungs, generally enables him to obtain some sleep. His sleep is, however, frequently interrupted by sudden and violent starts, and feelings of alarm and terror. The pulse is irregular, and commonly very hard; the thirst urgent; the urine scanty, high-colored, and sedimentous. As the disease advances, the feet become œdematous; the countenance is expressive of anxiety and alarm, and of a mixed, pallid and livid aspect. There is generally a dry and short cough attending the disease, more especially when the patient lies down, or uses bodily exertion. All the foregoing symptoms increase, if the disease continues unchecked in its course, until the quantity of fluid in the chest is so great as to prevent the patient from lying down even for a moment, and obliges him to take his short and disturbed periods of sleep in a sitting or leaning posture. The extremities are generally cold, and more or less benumbed.

Of all the foregoing symptoms, the sudden starting during sleep is, according to Baglivi, the most certain pathognomonic symptom of this disease. Laennec, however, asserts, that this symptom is sometimes absent; yet, when it does occur, it may be viewed as a very strong evidence of the existence of thoracic effusion.

Hydrothorax may occur either as an idiopathic affection, or as one symptomatic of organic disease of some viscera of the chest or abdomen. The former variety of the disease is very rare. By far the greater number of cases are of the latter kind. Organic cardiac disease is the most common source of symptomatic hydrothorax. Structural disorder of the liver and spleen, may also give rise to the disease, and cases are recorded, which appeared to have arisen from organic disease of the stomach. Chronic inflammation of the pleura, occurring as the *sequel of acute pleuritis*, is always attended with hydropic or sero-purulent effusion into the chest. A tuberculous state of this membrane, and aneurismal dilatations and ossifications of the large vessels within the cavity of the chest, sometimes give rise to this malady. Besides these peculiar causes, hydrothorax may be produced by any of the general and particular causes mentioned above. Dr. Ayre observes, that a plethoric state of the system predisposes especially to serous effusion into the cavity of the chest—more particularly in persons who have passed the middle period of life, and who have indulged freely in the pleasures of the table. The correctness of this observation will be acknowledged by every one who has paid due attention to this subject. When this disease arises from some general cause, the effusion almost invariably occurs only in *one side* of the chest; but in those cases which come on in consequence of organic or structural disorder, the dropsical effusion, almost without exception, takes place at once in both sides of the thorax.

*Prognosis.*—Idiopathic hydrothorax is not often a dangerous or unmanageable affection. Laennec says, that he considers the instances of death from the idiopathic variety of the disease, as rare as one in two thousand, when under the controul of judicious remediate management. Indeed, even in the symptomatic variety of the disease, we may frequently succeed in removing the effused serum; but this seldom affords permanent relief, since we can but very rarely thus remove the organic disorder upon which the effusion depends, and which consequently still continues to take place, and gives rise to further accumulation. Dr. Ayre asserts, that “the means which are sometimes used for the removal of the water in symptomatic hydrothorax, have now and then the effect, at the same time, of removing the organic disorder which gives rise to the effusion.” Sir Henry Hallford affirms, that he has ascertained from much experience, that if “the swelling in the feet or legs disappears without an increased discharge of urine, the patient generally dies very soon, and most frequently suddenly.” This circumstance is frequently remarked.

*Diagnosis.*—Ability to lie down only on the side affected, if the effusion has taken place only in *one side*. Percussion produces a very obscure and dull sound. The percussion should be made while the patient is in a sitting posture. General agitation, cough, and a sense of suffocation when firm pressure is made on the abdomen just below the ribs, so as to push up the viscera against the diaphragm. Inability to rest and sleep in a recumbent posture. If with these symptoms there is habitual cough; *starting during sleep*; tension and irregularity of the pulse; slight oedema of the feet, and of the integuments of the chest; great dyspnoea on ascending an acclivity or stairs, with a disposition to

syncope, we may pronounce on the existence of an effused fluid in the cavity of the thorax with confidence.

3. *Anasarca*.—*Cellular Dropsy*.—This form of dropsy consists in a morbid collection of serous fluid in the sub-cutaneous cellular tissue, and this accumulation may be either generally diffused throughout the whole body, or confined to a part of greater or less extent. The ordinary and most unequivocal sign, by which effusion into the cellular tissue is detected, is the pitting from firm pressure with the fingers. Anasarcaous effusion commonly commences in the feet and legs, and thence rises up over the body, with more or less rapidity. This, of all the forms of hydropic disease, is the most frequently connected with a sluggish and languid state of the system; and it is this form of the disease especially, which is apt to supervene on excessive losses of blood, and other exhausting or debilitating causes. The skin is exsanguinous, and of a peculiar sallow or pallid cast; and the patient frequently manifests a great disposition to drowsiness, with a depressed or sluggish state of the intellect. Anasarca is often attended with some degree of abdominal effusion; and the latter, when it forms the primary affection, is rarely wholly free from anasarca. When anasarca arises from general causes, however, it is rarely connected with ascites. In nearly all instances in which these two forms of dropsy co-exist, the effusions into the internal cavities precede those into the cellular membrane. Local anasarca, may be produced by whatever impedes the free return of the blood by the veins. Hence, the gravid uterus, tight bandages, and the pressure of indurated glands in the groins, often give rise to œdema of the feet and legs, by compressing in some degree the iliac veins. Mere debility, too, especially when aided by a long-continued erect posture, will have the same effect; and hence the frequency of œdema during the debility of convalescence from fevers. In nearly all organic diseases of the heart, œdema ultimately occurs in the feet and legs—more particularly in cases attended with ossification of the valves. Anasarca, from suppressed perspiration in consequence of the influence of cold, generally comes on and proceeds to its acme rapidly.

*Prognosis*.—This form of dropsy is not often attended with much danger when it occurs as an idiopathic affection—that is, without organic disease, and in consequence of some general remote cause, such as cold, arsenic, scarlatina, hæmorrhage, &c. When unattended with abdominal or thoracic effusion, it is, upon the whole, much more frequently removed by remediate treatment than the other forms of dropsy. The more rapidly the disease supervenes, the more easy in general is its removal.

*Causes*.—Hæmorrhages; suppressed perspiration from cold, particularly after scarlatina, or when the system is under the influence of mercury; the long-continued internal use of arsenic; intestinal irritation; great debility and exhaustion; repelled cutaneous eruptions; chronic gout; excessive and long-continued diarrhœa; indurations, organic disease of the kidneys, &c. are the most common causes of this variety of dropsy.

*Treatment*.—If the pathology which is laid down in the commencement of this chapter be correct, the principal indications to be pursued in the



treatment of dropsy are, 1, to subdue the local sub-inflammatory or irritated action of the structures from which the dropsical exhalation takes place; and, 2, to promote the absorption and removal of the effused fluid. The first of these *general* indications is to be fulfilled, 1, by diminishing the general momentum of the circulation where it is preternaturally great; and, 2, to drive the blood, as much as possible, from the capillaries immediately implicated in the morbid effusion, and to equalize the circulation. The second *general* indication is to be fulfilled; 1, by promoting the activity of the various serous excretories; 2, by diminishing the quantity of blood circulating in the venous extremities of the structure from which the dropsical fluid is poured; and, 3, by stimulating the activity of the absorbent system. One of the first and most important measures to be adopted in establishing an adequate derivation of blood from a part, is to diminish the general impetus of the circulation. In vain will we endeavor to diminish the preternatural afflux of blood to an irritated or inflamed part, if the *vis-a-tergo* of the circulation, or its general momentum, be suffered to remain undiminished.

Full and frequent courses of medicine, in whatever form of dropsy, should be rigidly persevered in, to accomplish this purpose. Frequent steamings and frictions to the surface, must not be neglected. The courses should be given daily, or every second day, until a salutary impression is made on the disease, with the proper intermediate tonic treatment. Debility of the system should not constitute any objection to this general rule, where the pulse is active, tense and frequent.

Hydragogues, or diuretics, (such as create a flow of urine,) are particularly indicated in this complaint.

Full courses, tonics and diuretics, therefore, constitute our most important remedial measures, alternated, intermixed and varied to suit the condition of the patient.

Any of those mentioned under the head of diuretics, may be advantageously employed. Several of the compounds that will be found very servicable, are here conjoined.

The honey bee receives the sanction of experience in this class of remedies, as possessing peculiar and salutary power. It may be given in decoction, a table-spoonful of the bees to a pint of boiling water. Two table-spoonfuls may be given every hour, after they are sufficiently steeped.

The bitter-root, of our materia-medica, combines an active diuretic property, and, for this purpose, may be prepared in gin; but a still greater quality resides in another species of the same genus, known at the South as *silk-weed*, or *milk-weed*. It may be advised either in tincture or decoction. It acts on the bowels; and also produces nausea and vomiting, if long continued, which are not unaccompanied with beneficial results in this complaint.

Take two handfuls of the green inner bark of the common white elder—steep it in two quarts of white Lisbon wine twenty-four hours, and take a table-spoonful every four hours. A strong tea of the clivers, is highly recommended. Any of the following articles may be separately, or in combination, administered: Sumach, principine, parsley, asparagus, horse-radish, the juice of the onion, the inner bark of the

pine, juniper berries, water-mellon seeds, yellow parilla, burdock, golden-seal and agrimony.

The bowels should be kept free by the daily use of the bitter-root or silk-weed, in connexion with other medicine. The vapor bath should in all cases be applied daily, with thorough and prolonged frictions with a rough towel or flannel. If, after our active and thorough remediate measures, for a continued time, the disease still accumulates rather than lessens, tapping in ascites should certainly not be postponed. The mere mechanical irritation of the effused fluid, when the distention is very great, must tend to keep up that morbid condition in the peritoneum which gives rise to the effusion.

This operation consists in making an opening into the cavity of the peritoneum, for the purpose of discharging the dropsical fluid. The proper instrument is a trocar, with a canula through which the fluid can escape.

Until very lately, it was the invariable practice to introduce the instrument at the central point of a line drawn from the umbilicus (navel) to the anterior superior spinous process of the ilium, and on the left side, in order to avoid all risk of injuring the liver. Modern practitioners usually prefer making the puncture in the *linea alba*, for several reasons. First, in the other method, you are not sure of introducing the instrument in the exact situation of the *linea semilunaris*, and consequently, may unnecessarily wound the thick, muscular parietes of the abdomen, instead of a thin tendinous part. Another reason is, that the epigastric artery has sometimes been wounded by very skilful men, when they have attempted to tap the *linea semilunaris*.

In dropsical cases, the *rectus* muscle is frequently much broader than in a healthy subject; and as it always yields to the distention of the fluid in a greater proportion than in the lateral layers of the muscles, the above mentioned measurement is very likely to cause the wound to be made near the course of the epigastric artery.

The patient may be placed in a chair or in a recumbent position. When the operation is to be performed in the median line, the instrument should be introduced two or three inches below the navel. As soon as the trocar meets with no further resistance, it is not to be pushed more deeply without any object, and with a possibility of injuring the viscera. The stilette is now to be withdrawn and the fluid allowed to escape through the canula.

In consequence of the sudden removal of the pressure of the fluid on the viscera and diaphragm, patients are very apt to swoon, and even become affected with dangerous symptoms. To prevent, as far as possible, these unpleasant occurrences, the abdomen should be compressed by a bandage or belt, during the discharge of the fluid, and afterwards a towel should be pinned tight around it.

Much dispute has existed as to the propriety of allowing the patients the free use of aqueous potations. It has been strenuously asserted by some, especially the older writers, that the plentiful use of drinks, in this disease, is decidedly prejudicial. Others, on the contrary, have maintained that this grateful indulgence is not only harmless, but often manifestly beneficial. Upon this subject, however, no univocal rule can

be laid down ; for the fact appears to be, that in some instances, a liberal indulgence in the use of drinks, is followed by unfavorable consequences ; whilst in other cases, manifest benefit results from it. In all those instances of hydropic effusion which are the result of excessive hæmorrhage, copious draughts of diluent drinks are, according to the best observations and views, decidedly detrimental. When the blood-vessels are suddenly deprived of a large portion of their contents by hæmorrhage, their veinous extremities absorb with great rapidity whatever aqueous fluid may be taken into the system. The blood-vessels will, therefore, soon be replenished, if much fluid be taken into the stomach ; and as this circumstance, from the large proportion of crude watery fluid in the blood-vessels, must favor the dropsical effusion, as explained in the beginning of this chapter, injury can scarcely fail to result from the free use of diluents in such cases. The blood, in dropsies from hæmorrhage, consists almost wholly of serum, the crassamentum being always exceedingly small ; and the more drink there is taken, in such cases, the longer will the morbid disproportion between these two constituents of the blood, continue. Upon this point, Dr. Parry makes the following observations, which go directly to strengthen the above sentiments : “ When dropsy is associated with large hæmorrhages, it does not usually accompany them, but comes on after they have ceased ; and I have concluded, that it is the effect of the fluids taken into the stomach being absorbed too suddenly for the relative state of the vessels, which, therefore, strive to get rid of it by every outlet.” It appears manifest, therefore, that in such cases of dropsy, it will be advantageous to abstain as much from the use of drink as the urgent thirst will admit. In instances arising from other causes, however, and in which the general diathesis is manifestly phlogistic, a moderate indulgence in the use of mild beverages may be allowed with advantage. When, indeed, the thirst is great, and the blood sizy, diluent drinks may be regarded as decidedly remedial, and should be very freely taken.

## ARACHNITIS—HYDROCEPHALUS, OR INFLAMMATION, WITH WATER IN THE HEAD.

THIS form of disease has of late years been extensively investigated by Martinet and Duchatelet, of Paris, and by Dr. Abercrombie, of Edinburgh, whose pathological researches in relation to this subject, are highly interesting and valuable. I treat of hydrocephalus and arachnitis under the same head, for it is now placed beyond all doubt, that the malady known and described under the name of *hydrocephalus*, consists essentially of arachnoid inflammation. The term hydrocephalus is, indeed, altogether inappropriate to the disease; for, instead of directing the mind to the primary and essential affection, it has reference only to *one* of its ordinary consequences—namely, serous effusion on the surface and within the cavities of the brain. Dr. Rush was one of the first who taught correct views concerning the pathology of this disease. “Having for many years,” he says, “been unsuccessful in all cases but two of internal dropsy of the brain, which came under my care, I began to entertain doubts of the common theory of this disease, and to suspect that effusion of water should be considered only as the effect of a primary inflammation in the brain.” He regarded this disease as a subacute grade of cerebral inflammation, or an inflammation less violent than that which gives rise to the symptoms of phrenitis, and therefore distinguished it by the name of *phrenicula*. The impropriety of designating this disease by the name of *dropsy*, is often strikingly exemplified by the post mortem phenomena; for in some instances very little or no serum is effused into the ventricles, or upon the surface of the brain, although the symptoms were unequivocally those which are acknowledged to characterise hydrocephalus.

It is, nevertheless, probable that an effusion within the cavity of the cranium does sometimes occur without inflammatory action of the vessels of the encephalon, from mere congestion of the cerebral blood-vessels. This is, perhaps, the case in some of the instances which are ushered in by convulsions, or a state of somnolency and stupor, without any manifest previous febrile irritation. Be this as it may, arachnoid inflammation constitutes unequivocally the essential pathological condition of what is generally known under the denomination of hydrocephalus.

Arachnitis occurs most commonly during childhood; and the period of dentition is the age during which the greatest aptitude exists to the disease. That there should be a particular proneness to this malady during the process of dentition, is easily to be understood. Whilst this process is going on, there is almost always more or less local irritation in the immediate vicinity of the brain, connected with a general irritable and phlogistic condition of the system—circumstances which, co-operating with the natural predominance of the cerebral circulation in infancy, are well calculated to invite to inflammatory affections of the head, during this period of life.

*Symptoms.*—Arachnitis may be divided into three stages. The first stage may be called the *irritative* period; for, in the commencement of the disease, the symptoms are those of an *irritated*, rather than an in-



flamed condition of the brain. The approach of the disease is frequently very gradual, more especially during early childhood. In many instances, the brain manifests a very irritable condition for several weeks previous to the full development of the disease. The patient is wakeful; irritable in temper; evincing a repugnance to strong light, on account of the sensible state of the retina; the pupils are contracted; the disposition fretful and variable; small children cry frequently, without any apparent cause, and, when sleeping, often start or awake suddenly, with violent screaming, "and an expression of terror in the countenance." Nurslings, when awake, often "start at the slightest noise, and shriek suddenly, as if pricked with a pin." This state of cerebral irritability, sometimes exists and continues for a time without passing into the inflammatory state; the child gradually returning to its ordinary condition of health. When, in this state, some additional exciting circumstances supervene—such as cold, dentition, or intestinal irritation from improper food, or other irritating substances lodged in the bowels, this irritative condition of the brain is increased, and, sooner or later, converted into inflammation. A new train of phenomena now ensues, which characterises the *inflammatory*, or second stage of the disease. The patient complains of transient pains in the head, alternating often with similar pains in the abdomen. The restlessness and irritability of temper increases; the pulse is irritated, quick, tense, and activo; the physiognomy expressive of discontent and suffering; one or both cheeks marked with a circumscribed flush; the eyebrows knit and frowning; and the eyelids generally half closed, on account of the sensible state of the retina. The bowels are commonly torpid, and sometimes relaxed, the stools presenting an unnatural appearance. As the disease goes on, the cephalic pains become more and more severe, suffering occasional remissions, and sometimes subsiding entirely for a few minutes. These pains are felt chiefly in the forehead, shooting backwards towards the temples. Children manifest their sufferings from the headache, by frequently applying the hands to the forehead. At this period of the disease, the stomach is usually very irritable—the retching and vomiting becoming often very troublesome, particularly when the patient is raised to a sitting posture. Many instances have been met with, in which no disposition to vomit was manifested whilst the patient remained in a recumbent position; but the moment the head was raised from the pillow, sickness and vomiting ensued. Indeed, children affected with this disease always bear the erect position with great uneasiness. "In the early part of the disease, the little patient cannot sleep with the head low; he lies in the bed with outstretched arms, which have a tremulous motion; are often directed towards the head, and firmly clasped upon it; he is constantly turning and tossing from one side of the bed to the other, and very frequently groans much, as if under the influence of pain." The sickness of the stomach sometimes alternates with the cephalic pains. One of the most common and characteristic symptoms of this complaint is frequent and deep sighing; though this is seldom much noticed until the disease is fully developed, and is generally most remarkable about the period when the inflammation is about terminating in effusion. During the latter part of the inflammatory stage, transient de-

lirium usually occurs; but the delirium of arachnitis is never violent or furious, but of the tranquil kind, and rarely so great that the patient may not be roused from it, so as to give distinct answers. The skin, in this stage, is generally above the natural temperature, and dry; the tongue, for the most part, remains clean, or covered only with a thin white fur, with pale red edges. In cases, however, which depend on gastric irritation, it is apt to be covered with thick brown fur, becoming dry and rough towards the termination of the disease. After an indefinite period, these inflammatory symptoms are succeeded by a new train of phenomena, marking the third stage, or the period of cerebral oppression. The delirium is now more continuous; the countenance exhibits an aspect of surprise and stupor; the pupils are dilated, or much contracted; the conjunctiva is suffused and reddish; the eyes turned up under the upper lids during sleep; constant somnolency supervenes, the patient being wholly inattentive to surrounding objects, and, when roused, speedily relapses into the same somnolent state. The mind is torpid, and apparently incapable of any attention. The drowsiness increases more and more, until a complete state of coma ensues. In some instances, the coma comes on suddenly in conjunction with paralysis of one side or one extremity; but it more commonly approaches in the gradual manner just described. Indeed, instances occur, in which no febrile excitement is developed, the first manifestations of the disease being an unusual drowsiness or torpor. In this latter case, arachnoid inflammation exists, no doubt, without showing itself by its usual symptoms; for it is well ascertained, that inflammation may go on in the brain, even to the extent of terminating in extensive and fatal disorganization, without causing either pain or any other general symptoms characteristic of inflammation. Soon after the somnolent stage supervenes, paralytic affections generally occur. A tremulous motion of one arm, with the hand firmly contracted inwards, is usually one of the first manifestations of paralysis in infants; and, by degrees, the power of using the arm and leg of one side, becomes entirely lost; one or both upper eyelids usually becoming paralysed at the same time, so that the patient, in endeavoring to look at any thing, is unable to raise the lids by their proper muscles, and is, therefore, obliged to draw them up with the integuments of the forehead, by the contraction of the occipito-frontalis muscle. Previous to the occurrence of paralysis, squinting almost always occurs, and in many instances there is double vision. In general a sudden amendment in nearly all the symptoms takes place soon after the inflammation has terminated in effusion; and parents and friends, nay, even physicians, may be deceived into the hope that the disease is about assuming an unexpected favorable change. This flattering calm is, however, seldom of long continuance, and almost universally ultimately fallacious; for, sooner or later, convulsions suddenly supervene, or the patient relapses into a state of fatal coma and stupor. Convulsions rarely, if ever, remain wholly absent towards the fatal termination of this disease. During the somnolent stage, the pulse is generally slow and full, and often irregular; but in the convulsive or paralytic period, it becomes frequent, small, and irregular. In the latter stage of the disease, both hearing and seeing are often totally lost, yet general sensibility, or the

sense of touch, usually remains to the last moments. I have seen infants, perfectly deprived of the sense of seeing, and apparently of hearing, readily lay hold of the nipple and suck as soon as it was brought in contact with the lips, although in a continued state of stupor or sleep. The paralysis which occurs in the latter stage is always of the hemiplegic kind. In most cases, small children keep one arm in continued motion. Martinet and Duchatelet state, that patients suffering under this disease exhale a very disagreeable odor, which they compare to the smell of mice.

Arachnites does not, however, always come on in the gradual manner and with the regular train of symptoms just described. Sometimes the disease commences and proceeds in a manner very similar to the infantile remittent; and at others it is ushered in by convulsions, without any perceptible antecedent febrile irritation. In this latter case, however, there is, perhaps, always some evidence of ill health, previous to the supervention of the convulsion, such as fretfulness, variable appetite, irregular state of the bowels, tumid abdomen, foul breath, swelled upper lip, starting, and grinding the teeth, during sleep, and other symptoms indicative of intestinal irritation. I have known the disease to commence and proceed to the last stage with scarcely any other symptom than slight febrile irritation, with little or no pain in the head, but a *constant and nearly ineffectual* desire to pass urine. In one instance there was not above a gill of urine discharged in twenty-four hours, during the first five days of the malady, and no other particular morbid condition was perceptibly present. In this case the urine was not retained, for the introduction of the catheter brought off none. Dr. Monro observes, "that there are cases in which the little patient has a desire every hour to pass water;" and states that "he attended a child affected by this disorder, who passed for some days very little urine." The liver generally sympathises strongly with the brain in its inflammatory affections. During the forming stage of the present complaint there is usually a deficiency of bile; but in its advanced periods, the bile is not only more copious, but vitiated in its quality—the stools acquiring from its admixture with the ordinary secretions and contents of the bowels, a dark glairy, or deep green appearance, resembling, as Dr. Cheyne observes, "*chopped spinage*."

*Diagnosis.*—The characteristic symptoms of the first stage, are—irritability of temper; irregularity of the bowels; variable appetite; starting in sleep; transient flushes of the face; an irritated, quick pulse; an occasional frowning expression of the countenance; wakefulness, and grinding the teeth. In the second stage: more or less continued pain in the head; torpor of the bowels; nausea and vomiting, particularly on assuming the erect posture; irregular febrile exacerbations; a peculiarly distressed expression of the countenance, sudden starting from sleep; transient acute pain in the abdomen; a circumscribed flush on *one* cheek; intolerance of light and sound; hot and dry skin, with frequent, tense, and generally active pulse. In the last stage: constant somnolency; torpor of the intellectual functions; strabismus; paralysis of one or both upper eyelids; more or less hemiplegia, coma, and convulsions. From *infantile remittent*, arachnites differ in the great irregularity, both in re-

lation to duration and time of recurrence of the remissions and exacerbations of the second stage. The appearance of the stools too, will often assist us in the diagnosis between these two affections. In infantile remittent, the alvine discharges are fetid and of a dirty brown color; in arachnitis, they frequently have a glairy and dark green appearance. Dr. Coindet states, that a micaceous deposition, like crystals of boracic acid in the urine, is almost peculiar to hydrocephalus in its second stage.

M. Gintræ gives the following, among a number of other diagnostic symptoms, between idiopathic arachnitis, or cerebral fever, and infantile remittent, or fever from intestinal irritation. In idiopathic cerebral fever, the abdomen becomes flattened; in infantile remittent, or fever from intestinal irritation, from worms, &c., the abdomen is almost always tumid and hard. In the former affection, costiveness almost invariably attends, and when alvine evacuations do occur, they are generally green, slimy, or gelatinous: in the latter disease, there is frequently more or less diarrhœa, the motions being brown, mucous and fetid. In idiopathic cerebral fever, the secretion of saliva is diminished: in fever from verminous irritation, it is generally increased. In cerebral fever, the tip and edges of the tongue are usually red: in fever from intestinal irritation by worms, the root and middle of the tongue are covered with a thick fur. In idiopathic cerebral disorder, the pain in the head is often extremely severe and continuous; in verminous fever, the pain is less severe, being obtuse and vague, the child seldom complaining of it as particularly distressing. In the former affection, the patient often directs his hand to the head: while in the latter, "it is usually to the nose that the fingers are directed, in consequence of the itching there." In verminous fever, we often perceive a moment of deglutition during sleep, and hiccough, with occasional slight convulsive movements of the thumb and index finger. In the idiopathic cerebral disease, the nostrils are dry; in fever from verminous irritation, they are usually moist. In the former there is often a circumscribed flush on one or both cheeks; in the latter, the face is commonly pale and leaden. In cerebral disease, the temperature of the head is above that of the abdomen: in intestinal irritation, the reverse obtains. In the former the urine is small in quantity, red, and sedimentous: in the latter, it is sometimes clear and abundant; frequently whey-like, depositing a white sediment.

Dr. Johnson very justly observes, however, that "there is no one pathological symptom, which can be depended on as characteristic of idiopathic cerebral fever, nor yet of the intestinal." Our conclusions must be drawn from the whole of the symptoms taken collectively.

Dr. Alexander Monro has described a variety of hydrocephalus, which he calls the "hyper-acute form" of the disease, a form of very rare occurrence, and simulating, in some of its most striking symptoms, inflammatory croup. "This rare form of the disease is very sudden in its attack. There is no previous headache, drowsiness, stupor, nausea, vomiting, paralytic state of any part of the body, or any other symptom denoting a derangement of the functions of the nervous system. It begins like croup. The child awakens in the night in a state of extreme



agitation, and much flushed, and with a quick pulse; he is hoarse, and the sound of the voice when he inspires is similar to that of croup. The patient, at the onset of the disease, seems in a state of nervous irritation; often starts in his sleep, and in a short time, the disease assumes the appearance rather of a spasmodic affection of the larynx, than of the inflammatory croup. The matter thrown up by vomiting, consists generally of indigested food. The longer the disease continues, the shriller and hoarser the voice becomes."

In the dissections which were made of children who died of "this form of the disease, Dr. Monro found in one instance, the vessels of the pia mater at the corpora quadrigemina and tractus optici, and at the origin of the eighth pair of nerves, much distended with blood. No morbid appearance was discovered in the larynx and trachea." In another case, "the upper part of the brain, particularly the superior part of the posterior lobes, was covered with a transparent gelatinous effusion;" and about an ounce of colored serum was found in the ventricles. "The vessels of the spinal marrow were turgid, those of the cervical portion of a vermilion-red color, and those of the lumbar portion of a dark-red hue. *The eighth pair of nerves* was of a deep uniform red color along its whole tract, as far as its branches, going to the lungs."

Dr. Burns attributes this form of hydrocephalus, "to an affection of the origin of the eighth pair of nerves, induced by the state of the extremity of the fifth pair in dentition acting on its origin, which is near the eighth."

*Causes.*—It would seem, that in some instances a hereditary or constitutional predisposition to the disease exists. Families have been known, of which nearly all the children died during the period of dentition from arachnitis. It has been affirmed, also, that children of a scrofulous diathesis, are peculiarly liable to this affection, an observation which appears indeed to be well founded. In general, children of an irritable habit, with weak or deranged digestive powers, seem to be most liable to this disease. Dr. Mills states, that in a large proportion examined, the appearances of scrofula were evident. And Percival observes, that out of twenty-two, eleven cases "were decidedly scrofulous."

Among the most common exciting causes, are: blows, falls, or other injuries of the head, causing more or less concussion; insolation, suppressed habitual evacuations, or repelled chronic cutaneous eruptions; metastases of different kinds; intense and long-continued mental application; the intemperate use of ardent liquors; the protracted influence of the depressing passions; dentition; intestinal irritation; whooping-cough; cold, and in short, whatever is capable of at once deranging the digestive organs, and causing a preternatural determination of blood to the brain. The most common cause of arachnitis during childhood, however, is the combined influence of dentition, and intestinal irritation on the brain. If, while painful dentition is going on, the digestive functions suffer derangement, from improper diet or some other circumstance, there will be two powerful causes of cerebral irritation and congestion present, which, under the general derangement of health which

necessarily attends, will tend peculiarly to develop this fatal malady.—*Intestinal irritation* is, indeed, very frequently the exciting, or perhaps, rather the predisposing cause of infantile arachnitis. The variable appetite; the irregular action of the bowels, and frequent unnatural appearances of the stools; the tumid abdomen and gastric tenderness; the picking and rubbing of the nose, and the pale and sickly aspect of the countenance which so often precede the development of the disease, all point to the alimentary canal, as the probable source of the primary irritation, with which the brain sympathises. When such gastric irritation exists, the supervention of any additional exciting cause, such as a severe fall, or blow on the head, painful dentition, cold, &c., will often speedily develop this fatal malady. An interesting fact, corroborative of the observation that arachnitis and consequent effusion into the cavities of the brain is especially apt to result from intestinal irritation, is the circumstance that *cholera infantum*, when it assumes somewhat of a chronic form, terminates not unfrequently in death, under all the characteristic symptoms of the last stage of hydrocephalus. In two instances of this kind, on post mortem examination, was found the traces of arachnoid inflammation unequivocal, with copious serous effusion into the ventricles, and between the circumvolutions of the brain. While we give all the importance to intestinal irritation, as a cause of arachnoid inflammation, which it unquestionably demands, we must bear in mind, that this same cause sometimes gives rise to a form of cerebral oppression, strongly resembling the last stage of arachnitis, but which is, nevertheless, wholly unconnected with cephalic inflammation. The determination to the head, in such cases, results merely in a state of strong venous congestion of the brain, giving rise to a somnolent and oppressed state of the system, which may be readily mistaken for hydrocephalus.

*Softening of the Brain.*—This form of cerebral disease has of late been particularly investigated by the French pathologists. Recamier, Bayle, Cayol, Brichteau, Rostan, and Lallemand, have published numerous and interesting observations concerning its symptoms and pathology. The disease, as it is manifested on dissection, consists of a *softening* or a kind of liquefaction of a portion of the cerebral mass, with vascular injection of the surrounding substance. Rostan divides the disease into two periods.

The symptoms of the first period are: a fixed and violent pain in the head, often continued for several months; vertigo; obtuseness of the mental faculties; confusion of the ideas; and weakness and temporary loss of memory; questions are answered after long hesitation; and the patient appears at times dejected, querulous, and wholly indifferent to surrounding objects. There is generally a sensation of tingling and numbness in the extremities of the fingers; vision is often perverted, and in some instances, total blindness occurs at times. The hearing is almost always dull, but in some cases the reverse obtains, the sense of hearing being morbidly acute. Some complain of tenderness of the epigastrium, with constipation and variable appetite. The pulse is often full and hard, and sometimes intermitting. Occasionally, there is temporary delirium, with fever and much agitation.

The second period is characterised by the gradual or sudden super-

vention of paralysis of *one* limb, sometimes of half the body; but consciousness and intellect remain. Questions are now answered with very great difficulty, the patient generally expressing his desires by automatic movements. In some instances, a complete state of coma occurs, followed occasionally with convulsions.

In most instances, a sudden attack of convulsions is the first symptom that excites alarm. These convulsions often continue for many hours, followed, in some cases, with deep coma and a *contracted state of the flexor muscles of the limbs*. Occasionally, the paroxysms of convulsions recur repeatedly at short intervals, "the patient being sensible in the intermediate periods, and complaining of headach, till, after twelve or twenty-four hours, coma supervenes. From this state there is often a complete recovery for several days, when, without any warning, the convulsions return, and end in fatal coma."

The inflammatory nature of this softening of the brain has been much doubted by some. It has been supposed to be the consequence of a process similar to that which occurs in the softening of tuberculous matter in the lungs, and which, according to Laennec and some other writers, is peculiar to itself, and wholly independent of inflammation. The facts and arguments adduced by Lallemand, however, render the opinion of its inflammatory character, in most instances at least, extremely probable. This writer thinks that the *softening* is the "effect of inflammation arrested in its course by death, *before* purulent suppuration has had time to take place."

It is most probable, as Dr. Abercrombie observes, that this affection occurs under two modifications, one unequivocally attended with cerebral inflammation, and the other a species of cerebral gangrene from defect of circulation, in consequence of a diseased state of the arteries of the brain—an opinion which, he thinks, is confirmed by the fact, that the peculiar softening of the brain mentioned by Rostan, as unconnected with symptoms indicating an inflammatory action, occurs almost exclusively in very aged individuals, inasmuch as ossification of the cerebral arteries is very common in elderly people.

"In the cases of Rostan," says Dr. Abercrombie, "the disorganisation was observed chiefly in the external parts of the brain; it occurred almost entirely in very old people, few of his cases being under sixty years of age, many of them seventy, seventy-five, and eighty. It was found in connection with attacks of a paralytic or apoplectic kind, many of them protracted; and was often found combined with extravasation of blood, or surrounding old apoplectic cysts. On the contrary, the affection which the author has been anxious to investigate, is found chiefly in the dense central parts of the brain, or in the cerebral matter immediately surrounding the ventricles: and occurring in persons of various ages, but chiefly in young people and in children. It takes place in connection with attacks of an acute character, chiefly of the character of acute hydrocephalus; and it is in many cases distinctly combined with appearances of an inflammatory character, such as deep redness of the cerebral matter surrounding it, suppuration bordering upon it, and deposition of false membrane in the membraneous parts most nearly connected with it. We may even observe in different parts of the same

diseased mass, one part in the state of softening, another forming an abscess, while a third retains characters of active inflammation, and probably exhibits, as we trace it from one extremity to the other, the inflamed state passing gradually into a state of softening. This is the infection which authors have endeavored to investigate, and which may now be considered as one of primary importance in the pathology of acute affections of the brain, and which can only be considered as the result of inflammation.

*Treatment.*—When this disease first becomes an object of medical attention, the remediate measures generally advised in all acute preternatural excitations, attended with an undue determination of blood to any given part, will also be applicable here. Full courses of medicine to equalize the circulation, must be promptly and repeatedly administered.

The diaphoretic powders will form important auxiliary means, and should be repeated at intervals of every two or three hours between the courses.

Sinapisms, composed of corn meal and a quantity of cayenne pepper, may effect a beneficial purpose applied to the feet. The bowels should be relieved daily by the exhibition of bitter-root and cayenne, equal parts—and by the aid of clysters, composed of composition No. 6, and cayenne.

Cold effusions of water and vinegar, are accounted useful in the treatment, as they favor a revulsive influence. The efficacy of this plan of medication, justifies the expectation of speedy amendment and restoration in the inception of the inflammation of the brain, and even in the advanced stages of most cases; but where lesions and disorganisation have already become established, any course of treatment whatever will prove ineffectual. Nothing more can be done than to palliate, if possible, the urgent symptoms and lessen pain.



## RACHITIS, OR RICKETS.

The characteristic marks of this disease are, an uncommon size of the head, swelling of the joints, flattened ribs, incurvation of the spine, distortion of the cylindrical bones, protuberance of the belly, and general emaciation.

Rickets is an hereditary disease in some families, though parents that have been affected with it, have sometimes a healthy and robust offspring. In some instances, it can be traced to a venereal taint, which, though not the immediate cause, is very often an exciting one of it and scrofula. At least, it is certain that syphilis, transmitted from parents to their children, appears in the latter in a manner very different from that in which the former are affected. We find that the children of the indigent and profligate are those most generally afflicted with rickets; but at the same time it must be allowed that there are many circumstances which conduce to this disease; such as a damp and cold residence, impure air, inattention to cleanliness, bad nursing, want of due exercise, a deficiency of food, and debility. Difficult dentition, and the pain and bowel complaints arising from it, may favor, in a powerful manner, the action of the exciting causes of rickets.

The proximate cause of the disease is now supposed to be a deficiency of the phosphate of lime or animal gluten in the bones; hence the latter are deprived of that necessary strength and solidity in consequence of the prevailing debility in the vessels, so that the former, instead of being conveyed to the bones, is deposited in other parts of the body. Thus we find particles of lime often evacuated in the urine of rickety children.

The disease seldom appears before the ninth month, and very rarely shows itself after the second year of a child's age. It is more frequently met with among the children of the poor than in those of higher rank, and seems to be almost solely confined to cold climates where much moisture prevails, which seems to indicate that a peculiar atmosphere has a great share in giving rise to it.

It usually comes on slowly, and the first appearance of it to be observed are, a flaccidity of the flesh, emaciation of the body, paleness, and loss of color in the cheeks, if they have been rosy, and a slight degree of tumefaction of the face. The head at the same time appears large with respect to the body, and the sutures and fontanelle are preternaturally open. The head continuing to increase in size, the forehead becomes at length unusually prominent, and the neck appears very slender in proportion to the head. Dentition is at the same time very slow, and much later than usual, and the teeth that do appear soon spoil, and are apt to fall out. The ribs lose their convexity, the sternum protrudes in the form of a ridge, the spine is incurvated, and the epiphyses at the several joints of the limbs become swelled, while at the same time the limbs between the joints appear to be more slender than before, and from their inability to support the weight of the body, become somewhat flexible, and at last much distorted.

With these symptoms the child experiences a great diminution of its strength, is averse to making the least exertion, and is unable to walk.

Its appetite is not often much impaired, but its stools are usually frequent and loose, and its abdomen appears uncommonly full and tumid. With regard to its mental faculties, the understanding is most generally very mature, but in a few cases stupidity or fatuity ensues. At the commencement of the disease there is no fever present; but in its more advanced stage, a frequent pulse, with other febrile symptoms of a hectic nature, attend.

In some cases the disease proceeds no further, and the child gradually recovers its health and strength, the limbs being left however in a distorted state. In others it continues to increase, till at last every function of the animal economy becomes affected, and the tragic scene is closed in death.

Cretinism (which is to be met with very generally among the inhabitants of that part of Switzerland nearest to Italy, in the deepest valleys of the Alps, where the atmosphere is extremely humid, in consequence of numerous waterfalls and rivulets that emit powerful exhalations through the influence of the sun's heat, while they are secluded from the access of every drying wind,) is a disease which has been supposed to be only as high a degree of rachitis as human nature can possibly sustain. This opinion is corroborated by an observation that the different stages or degrees of the evil correspond with the variations in the atmosphere. Those, for example, who inhabit the deepest and most reclusive valleys are reduced to the lowest state of imbecility and idiotism; in those who are somewhat more elevated, the mental powers are not so completely obtunded; and others still more elevated, and of course less exposed to exhalations, will probably be deformed merely with wens or swellings about the joints, and other symptoms of rachitis. Those who are nearer to the summits are perfectly exempt from all these appearances.

Cretinism is, in many instances, connected with goitre or bronchocele. An enlargement of the thyroid gland is indeed a striking feature in the unsightly aspect of the Cretin, but it is not a constant attendant: for Cretinism is frequently observed without any affection of the thyroid gland, and this gland is often much enlarged without any affection of the intellectual faculties.

The productions of Cretinism by the bad quality of the air and food, the neglect of moral education, and other evils, attendant upon poverty and indigence, and the deformity becoming so general in those regions by a seclusion from the rest of mankind, and by perpetual intermarriages, is supported by facts so strong and pointed, that the greater number of cases in mountainous districts may safely be ascribed to these causes, instead of to the use of snow-water, as a few have supposed.—That a use of snow-water produces either goitre or Cretinism, is an absurd idea; for persons born and living in places contiguous to the Glaciers, who drink no other water than what flows from the melting of snow and ice, are not afflicted with these disorders, and they are observed frequently in places where snow is unknown.

The causes of Cretinism begin to operate upon the system soon after, and perhaps even before birth; the want of energy in the parent is communicated to the offspring, the children become deformed and ca-

cheetic very early in life, the growth and development of the body are impeded, the abdomen becomes enlarged, and the glands swelled in various degrees; moreover, the powers of the mind remain dormant, and are at length obliterated, partly from the want of proper organisation, and partly from the total neglect of every thing like education.

The head of the Cretin is deformed, his stature diminutive, his complexion sickly, his countenance vacant and destitute of meaning, his lips and eyelids coarse and prominent, his skin wrinkled and pendulous, his muscles loose and flabby, and frequently he is affected with an enlargement of the thyroid gland, or goitre, which greatly adds to his unsightly aspect. The qualities of his mind correspond to the deranged state of his body, and the disease prevails in all the intermediate degrees from excessive stupidity to complete fatuity.

Cretinism was observed in Chinese Tartary by Sir George Staunton, in a part of that country much resembling Savoy and Switzerland in its Alpine appearance. Dr. Abercrombie mentions, that many cases of it are to be met with in the Pyrenees, and Les Cevennes of France.

A race of Cretins existing in the South of France has lately been presented to the notice of the profession under the appellation of Cagotts. In that part of France this degraded race is widely extended: the individuals of it, deformed with brouchocele, have an indistinct articulation, an air of stupidity, a sallow complexion, and an extreme apathy to all external objects. The Cagotts are pretty much the same as the Cretins of the Alps; they both present the same degree of imbecility, the last remains of the intelligence of man, together with the last traces of the human form.

The rickets, although attended with much distortion of the bones, and various other unpleasant symptoms, very seldom proves fatal; and we are only to regard it as attended with danger where the distortion becomes so great as to affect the office of the lungs and other organs; or where the enlarged size of the head shows that it contains a considerable quantity of water within it; or where the food is passed unchanged by digestion, which denotes a highly diseased state of the mesenteric glands.—Children at the breast are more exposed to the peril than those that have reached three or four years.

Various morbid affections of the internal parts are to be observed on opening the bodies of those who have died of this disease. The brain has commonly been discovered in a flaccid state, with effusions of a serous fluid in its cavities. The lungs have been found in a morbid condition, seemingly from some inflammation that had come on towards the close of the disorder; the spleen and liver are flaccid and enlarged; the intestines are pale or rather whitish; all the lymphatic glands, especially those of the mesentery and bronchia, are enlarged, and the latter sometimes suppurated; the bones, reduced to a fibrous state, are flexible, bent in several directions, and easily cut. With respect to the muscular parts, they have been found very soft and tender, and the whole of the dead body without that degree of rigidity which is so common in almost all others.

Mons. Leveille has paid some attention to the structure of a soft rickety bone, and it is described as having been exceeding light, yield-

ing with facility to the scalpel, and presenting throughout a cellular and spongy texture. Concerning the condition of the bones in rickets, Bichat remarks, that in this disease the solid structure forming the walls of a long bone entirely disappears; the whole of its interior presents a homogeneous appearance and cellular texture throughout: the periosteum is much thickened. In some instances the bones in rickets have been observed to be nearly of the consistence of common cartilage; have presented throughout an areolated texture, the cells being in some parts large, and containing a brown gelatinous substance.

*Treatment.*—In the cure of the rickets we should proceed on the plan of invigorating the system by bracing the solids and promoting digestion and the formation of good chyle. For this purpose, we must have recourse to such medicines as possess a tonic power, together with frequent immersion in cold water, the effects of which may be much increased by frictions with flannels, a free, open, and dry air, a generous nutritive diet with wine, and proper exercise by carrying the child in a horizontal posture. An erect one might be apt to increase the deformity.

When the appetite and digestion are in any degree impaired, emetics and the best tonic treatment should be advised. If the vapor baths are given, the cold dash should always follow, as by this we recover the tone of the surface, which may have been relaxed and debilitated by it.

When the rickets are accompanied with mesenteric obstructions, deobstruents, with small doses of bitter-root and cayenne, and repeated frictions on the abdomen, will have a beneficial effect.

In cases of difficult dentition we should resort to the means advised under this head, and in those of worms to vermifuge medicines.

The bed on which a rickety patient lies should consist of a hair mattress or oaten chaff, or it might be made of dried fern leaves, among which some aromatic herbs were mixed. Such beds are better than those made of feathers, for they do not yield to the weight of the body, and they are much drier. If the patient be very young he should be placed on his back, so that the weight of his body may have as little influence as possible on the bones; but as it is painful to remain constantly in this position, he may be allowed to sit up now and then, but not on a soft chair; he is to be placed on a seat capable of making a uniform resistance, with a high straight back, and without arms. He should not be allowed to walk for a considerable time; at first he will be incapable of doing so without assistance, and the strings and ribands necessary for supporting him contribute, by pressing on the parietes of the thorax, to deform that cavity.

Mechanical means have been proposed for obviating the effects of this disease, but it is nearly fruitless to attempt using any machines with very young children, and it is also impossible to confine them on their back in bed; besides, it would be extremely injurious to keep them constantly in this position: the continued extension of the limbs, and the inactivity of the muscles, would add to the general debility, and consequently increase the disease. Splints applied to the limbs, strong leather boots, and the apparatus for the spine, are really useful only in those cases where the patient is of a certain age, and when the progress of the



disease is gradual, and the strength not too much exhausted; and even in most of these cases the inactivity necessarily occasioned by these machines is productive of disadvantages which are not compensated by their good effects. Apparatuses of this kind may probably therefore be fitter for correcting vicious attitudes contracted by children of a weak frame, than deformity arising from rickets.

Mr. John Veirac, surgeon at Rotterdam, in his *Treatise on the Rickets*, which obtained a premium from the Society of Arts and Sciences at Utrecht, asserts, that the acidity of the milk in the stomachs of infants is incorporated with the mass of blood, and insinuates itself into the very substance of the bones. We are informed by him, that the blood in these cases after death effervesces with the liquor ammoniæ subcarb.—The cure he recommends corresponds with this theory, and consists in the exhibition of alkaline medicines.

Mons. Bonhomme, of Paris, in his *Memoir on the Nature and Cure of Rachitis*, advises a similar mode of treatment. According to this gentleman, the disorder arises on the one hand from the development of an acid, approaching in its properties to the vegetable acids, particularly the oxalic; and, on the other, from the defect of phosphoric acid, of which the combination with animal calcareous earth forms the natural basis of the bones, and gives them their solidity. From this opinion he infers, that the proper treatment of rachitis must turn on two principal points, viz: to prevent the development of the oxalic acid, and to re-establish the combination of the phosphoric with the basis of the bones.

These intentions, he thinks, may often be accomplished by the internal use of phosphate of lime and phosphate of soda, and by the external use of alkaline lotions. In this *Memoir* he relates several cases in which these practices were apparently attended with the best effects. A powder was formed of equal parts of phosphate of lime and phosphate of soda, and taken by infants twice a day to the extent of a scruple for a dose. The alkaline solution was made by dissolving half an ounce of common potass in a pound of very pure spring water. When this solution is to be used, the skin must first be rubbed with a dry cloth, or a piece of fine flannel. After this precaution, the diseased parts are to be washed carefully with the warm solution, and at length wiped so as to leave no trace of moisture. This wash must be repeated at least twice a day.

We are further informed by Monsieur Bonhomme, that he has seen various instances of children cured of their disposition to rachitis merely by washing with the alkaline liquid; but he considers the internal remedies as possessing superior efficacy.

He contends, that the calcareous phosphate taken internally is readily transmitted by the lymphatic passages, and contributes to ossification; and that the internal use of the calcareous phosphate, whether alone or combined with the phosphate of soda, powerfully contributes to restore the natural proportions in the substance of the bones, and thereby accelerates the cure of rachitis.

## SCROFULA.

SCROFULA appears in a great variety of forms and grades of violence—varying from the slightest habitual deviations from health, to the most distressing, rapid, and fatal forms of local and general disease. In a general way, scrofula may be divided into two distinct forms; namely, its *latent* and its *active* states. The former constitutes what is usually called the *scrofulous habit* or diathesis; and the latter, the state of full development and activity of the disease.

The *scrofulous habit*, or predisposition to the active forms of the malady, is characterised by the following phenomena: a peculiar delicacy and languor of the countenance, with a soft, rosy tint of the prolabia and cheeks; or a pale, soft, flaccid, and apparently tumid aspect of the countenance, with a dull lead-colored circle round the mouth, and a swollen appearance of the upper lip. The hair is generally fair, and the eyes blue or black. The head, particularly the posterior part, is usually large, and the temples flattened, or somewhat depressed. There is, in general, a great proneness to slight catarrhal affections, during which the wings of the nose and the upper lip are apt to become swollen. The edges of the eyelids are much disposed to become inflamed, and where the scrofulous tendency is strongly developed, the tarsi are almost constantly red and tender. The digestive powers are usually weak and irregular, and the bowels are apt to be either constipated, or affected with painful mucous diarrhoea. The appetite, also, is very variable—being sometimes entirely depressed, and at others very urgent. The urine commonly deposits a whitish sediment, and becomes turbid sometime after it is passed. A disposition to transient swellings of particular parts, as of the face and scrotum, is mentioned by some writers as belonging to this habit. In female children, a leucorrhœal discharge is apt to occur, from time to time; and in very young children, excoriations behind the ears, scabby eruptions about the head and lips, obstinate ophthalmia, together with a fretful and irritable temper, are among the most common phenomena attending the scrofulous diathesis. The growth of the body usually proceeds slowly; but the mental powers are generally precociously developed, and often astonishingly active. This dormant or inactive state of the disease may continue for many years, and at last pass off without terminating in any particular local affections. More commonly, however, the scrofulous habit gradually acquires strength, and at last, under the influence of the usual exciting causes, shows itself in its more obvious and active form.

The lymphatic glands along the neck and other parts, become enlarged and firm to the touch, in which condition they may remain for years, without either receding or going on to a more active form of disease. In general, however, they pass by degrees into slow inflammation, which at last terminates in suppuration or scirrhus. When they suppurate, which is by far the most common mode of termination, they form chronic indolent ulcers, from which a thin, milky, and somewhat viscid fluid is copiously discharged, and which are always extremely slow in cicatrising. The cicatrices left by these ulcerations are, in general, easily distinguished from those left by other ulcers. They are peculiarly uneven, irregular, and conspicuous. In connection with these tumors or ulcerations

about the neck, the eyelids and conjunctiva are very apt to become affected with obstinate inflammation; and, in some instances, much irritation occurs in the mucous membrane of the nose and bronchia. In a more advanced state of the disease, the salivary and thyroid glands, as well as the pancreas and other internal glandular parts, become enlarged and indurated. Scabby eruptions appear on different parts of the surface; the extremities of the long bones enlarge; ulcerations occur in the cartilaginous structures; some of the bones become carious; the large joints inflame and suppurate; in some instances the vertebrae become diseased; and occasionally the bones and soft parts of the nose, palate, and fauces, are more or less rapidly destroyed by ulceration. There is, in short, scarcely any part of the body which is not sometimes the seat of the frightful ravages of this affection.

The most common forms of scrofula, however, are, *tubercular consumption*; *white swelling*, or disease of the hip and knee joints, and *ophthalmia*.

The general progress and duration of scrofula are exceedingly various. In some cases it is developed in infancy, whilst in others the constitutional tendency to the disease remains dormant until the age of puberty, or to a period much later, before it manifests itself in an active state.—Some individuals are more or less affected with scrofulous disease of the lymphatic glands during the greater period of a long life, without experiencing any particular sufferings from this source. Much more commonly, however, some one or more of the distressing and fatal consequences already mentioned, ensue before the age of manhood. Although scrofula is vastly more common during childhood than at any other period of life, yet the occurrence of decided scrofulous affections in newborn infants is an exceedingly rare phenomenon. Mr. Lloyd, nevertheless, states, that he found the lungs of an eight months foetus tuberculous—the mother having died of phthisis pulmonalis; and a few similar instances may be collected from writers on this subject. The manifestations of scrofulous habit seldom make their appearance before dentition commences.

A remarkable circumstance attending the transmission of scrofula is, that although it is an hereditary disease, it does occasionally pass over one generation and appear again in the next, so that the grandfather and grandson (the first and third generations) shall both be scrofulous, while the intermediate one, which holds the more intimate relation of father and son, and connects the two others together, shall be exempted from any attack of the disease.

*Causes.*—Scrofula, or rather an especial predisposition to this disease, is one of those constitutional habits or tendencies which often occur in children as an *hereditary diathesis*. This, however, is by no means the only source of the scrofulous habit; for that it may be *generated* in individuals originally of sound constitutions, and born of parents perfectly healthy in this respect, by various external influences, admits of no doubt. The causes which are acknowledged to be most frequently and actively concerned in the production of a *predisposition* to this disease, are—

1. *Climatic and atmospheric influences.* It would appear that the

influence of *hot climates*, in infancy and early youth, has a considerable tendency to predispose the system to the occurrence of the scrofulous diathesis, from the subsequent influence of a cold and variable, and damp atmosphere. Scrofula is a very uncommon disease in the East and West Indies; but when the children of Europeans, born in these climates, or even the natives, are brought to reside in the variable climates of Europe and this country, they are in general particularly liable to suffer more or less from scrofulous affections. "We know at least," says Dr. Allison, "that a great majority of the inhabitants of the West and East Indies, both negroes and Hindoos, are unusually prone to scrofula when they come to temperate climates." A cold, humid, and variable atmosphere, more especially when aided by deficient and unwholesome nourishment, appears to have a strong tendency to favor the development of the scrofulous habit. It is from this cause, probably, that in the deep and narrow valleys of Switzerland and Savoy, in which the atmosphere is very variable and humid, certain forms of scrofula are very common. In Holland, and in some of the marshy districts of England, this disease is said to be peculiarly prevalent.

2. *The impure and confined air* of populous cities also seems particularly capable of promoting the occurrence of scrofulous diseases. It is certain, at least, that in the same amount of population, this malady is vastly more common in large and crowded cities than in the salubrious districts of the country. "It is notorious," says Dr. Gregory, "that the population of our large manufacturing towns—Manchester, for instance—pent up during the day in cotton mills, are of all others, most affected with it."

3. *Deficient and unwholesome food*, with the usual attendants, squalidness and mental depression, may contribute to the production of the scrofulous diathesis. Without doubt, however, coarse, indigestible, and irritating articles of diet, when habitually and freely used by young children, have a much more decided tendency to produce this affection, than mere deficient or innutritious aliment. An improper dietetic management of very young children, in relation both to quantity and quality, is probably one of the most common sources of scrofulous affections. By over-distension of the stomach, or the use of heavy, irritating, or indigestible food, dyspepsia and high irritation of the gastro-intestinal mucous membrane will seldom fail to supervene; and as this condition of the stomach and bowels is usually attended with a morbid appetite, more food is habitually taken into the stomach than can be digested, and the gastro-intestinal irritation is thus kept up, until the chylopoietic and assimilating functions, and indeed the whole system, become intimately deranged. Nothing is more common than to meet in children, who have been mismanaged in this way, and who are almost constantly eating from morning to night, glandular swellings along the neck, and scabby eruptions on the head and face, with tense and tumid abdomens, and other symptoms of gastro-intestinal disorder. where, from the health of the parents, no hereditary taint can be presumed to exist. *Chronic inflammation or habitual irritation of the mucous membrane of the stomach and bowels*, is probably much more frequently concerned in the formation of the scrofulous habit, than seems to be generally supposed. There



are few children long affected with what is usually called *marasmus*, who do not subsequently manifest a predisposition to scrofulous affections.

4. *Various diseases* possess a tendency to give rise to the scrofulous diathesis. This is especially the case with measles, scarlatina, and whooping-cough; but it would seem, that it is rather by the influence of cold, and errors of diet, during the stage of convalescence from these diseases, that the scrofulous habit is generated, than by any direct tendency in these affections to develop this diathesis. Without specifying any more causes of this kind, however, we may observe, in a general way, that whatever tends *permanently to derange the digestive powers*, and to debilitate the general system during infancy and childhood, is calculated to engender a predisposition to scrofula.

Upon this point, the observations Dr. Carmichael appear to possess much interest and value. "I have adduced," he says, "incontrovertible facts, which demonstrate that disorder of the chylopoietic viscera precedes and accompanies the symptoms of scrofula, and that there are the strongest grounds for believing that such disorder is, in a very great majority of cases, the immediate cause of the disease. A defective digestion continued for any length of time, must as certainly produce chyle or blood of a vitiated quality, and unfit to replenish the waste of the body, as the constant use of unwholesome food. A disordered state of the system first ensues, and is followed by various local complaints. It is highly probable, however, the *gastro-intestinal irritation*, which always attends, in a greater or less degree, where the digestive functions continue long in a disordered condition, contributes as much, and perhaps much more, to the production of the scrofulous symptoms in such cases, than the vitiated chyle which is prepared by the stomach."

It need scarcely be observed, that where there exists an hereditary or natural predisposition to scrofula, the foregoing causes have an especial tendency to excite it into a state of activity; for it is sufficiently obvious, that whatever is capable of *originating* the peculiar diathesis in question, will be still more apt to call it into action where it already exists.

Scrofula cannot be communicated by inoculation, or in the manner of a contagion. Hufeland inoculated healthy children with matter taken from mild scrofulous ulcers, without the least perceptible consequences on the health of the inoculated individuals. Mere local ulcers or scabby affections have, indeed, been known to occur from the frequent application of the matter discharged by ulcerations of this kind. Thus, healthy children who sleep with persons affected with scrofulous scabby eruptions about the head, will sometimes become affected with similar disorders. But these do not possess the character of true scrofula.

Pathologists have expressed a variety of opinions in relation to the essential nature of the scrofulous diathesis; but the most plausible doctrine upon this point is, that the scrofulous habit consists in constitutional or acquired excess of irritability in the lymphatic system, in connection with a weak condition of the assimilative powers.

*Prognosis.*—Where the predisposition is hereditary, the chance of subduing scrofula, after it has manifested itself in an active form, is

always extremely small. Nevertheless, it is a fact well established, that even where the diathesis is manifestly congenital, moderate cases of the disease not unfrequently disappear entirely about the age of puberty, or after the corporeal development is completed, and the age of manhood has arrived. It must be observed, however, that these epochs in the physical development of the system, are much more frequently attended with results of a very contrary character; for it is precisely at these stages of life, that the scrofulous habit is most apt to pass from a latent to an active state. Similar observations apply to the effects of acute general diseases. Severe febrile affections have been known to remove incipient scrofula, in habits obviously predisposed to the disease, but, as has been already stated, it is vastly more common to find the disease more or less rapidly developed by violent febrile affections—more especially measles, scarlatina and small-pox. In some instances, the disease slowly continues to develop itself, until the stage of puberty or manhood has arrived, when it remains stationary during the subsequent period of life. In forming a prognosis, as to the probability of effecting a cure, or of a spontaneous subsidence of scrofula, particular regard must be had to the following circumstances:

1. *The nature of the predisposing and exciting causes.* Where a number of causes of this kind co-operate in the production of the disease; and especially where the situation and circumstances of the patient are such as to render an entire removal of them impracticable, the chances of advantage from remedial management must, of course, be exceedingly limited. Among the poor and squalid, who can neither procure proper nourishment, nor protect themselves against the injurious influences of cold, it is next to impossible to effect a cure, when the disease shows itself in an active form. The greater difficulty of removing hereditary scrofula, than those cases which arise from external influences, has already been stated.

2. *The age of the patient and the duration of the malady.* The younger the patient is, the more easy, in general, will it be to remove, or effectually counteract the progress of the disease. When the disease makes its first *active* appearance after the age of puberty or of manhood, the chances of being able to suspend its progress are but small, and still less to remove the symptoms altogether.

3. *The degree of violence of the disease.* So long as the disease remains in a latent state, and is manifested only by the symptoms which characterise the scrofulous diathesis, a reasonable prospect of success may be entertained from proper remedial management. Even so long as the disease shows itself only in the usual form of glandular swellings about the neck, without any indications of tubercular formations in the lungs, a judicious treatment will sometimes arrest the further progress of the disease, and occasionally gradually effect a removal of the scrofulous symptoms. When these tumors become irregular, uneven, immovable, painful, and inflamed, the difficulty of arresting their progress, and still more of effecting their entire reduction, may be regarded with less certainty; and the prognosis will be the more unfavorable in proportion as these tumors are numerous. Suppurated scrofulous tumors, when they are situated externally, and not attended with a strong consti-

tional tendency to the disease—are not, in general, to be regarded either as more dangerous, or difficult of management, than mere inflamed tumors, although they are always extremely tedious in their progress, and cicatrise very slowly. Indeed, the *suppuration* of external glandular swellings is sometimes attended with a manifest melioration of the general scrofulous symptoms; and when suppurations of this kind occur in individuals laboring under slight incipient symptoms of pulmonary tubercles, they should be encouraged, rather than suppressed or cicatrised, unless, indeed, they begin to assume very unfavorable or dangerous appearances. When febrile symptoms, cough, and emaciation, supervene, all hopes of successful treatment may be abandoned.

4. *The seat of the local scrofulous affections* forms, also, an important consideration in estimating the probable issue of cases of this disease. So long as the disease appears to be concentrated upon the external glandular structures, some prospect of an eventual removal of the malady, may, with reason, be entertained; but when the ravages of the disease occur in deep-seated structures, or internal organs—particularly in the lungs, and mesenteric glands, all ideas of ultimate recovery may be abandoned as entirely hopeless.

*Treatment.*—The first, and decidedly the most important part of the management of scrofulous affections, is a constant and careful avoidance of the various exciting causes enumerated above. Without an especial attention to proper observances in relation to this point, nothing, or at best but very little, can be effected by remedial treatment. For as long as these causes are suffered to continue, the same effects upon the system will be kept up. The enjoyment of a pure, dry, and equable air; an attention to proper clothing, so as to obviate, as much as possible, the injurious influence of atmospheric vicissitudes; a wholesome, abstemious, but nourishing diet; regular exercise in the open air; and cleanliness, are certainly points in the outlines of treatment not to be overlooked. So long as the disease shows itself only by a general scrofulous habit, without any important local affections, the diet should be simple, nourishing, and digestible: and it is of great importance that the meals be taken at regular intervals, and no more food taken into the stomach at once, than can be easily and completely digested. All kinds of stimulating irritating articles of food must be carefully avoided; and the same observation applies to every species of stimulating drink. The lean parts of tender and digestible meats may be moderately taken at noon; and for children light animal broths; liquid, mucilaginous, or farinaceous preparations; barley, rice, boiled apples, turnips and milk, constitute proper articles of nourishment. With regard to the clothing of individuals laboring under a strongly developed scrofulous habit, it should be so regulated as to preserve as equable a temperature of the body as possible. Flannel should be worn next the skin, except in very warm weather, when it may be substituted by cotton. The influence of a pure and dry air, and if possible of an equable climate, is all-important to the successful management of this malady. It would appear, from the observations of some writers, that the air along the sea-coast, is often peculiarly beneficial in scrofulous affections; but these are advantages which can seldom be enjoyed but by the wealthy, and the

majority of scrofulous subjects in large towns cannot even obtain the benefits of a pure country air, so desirable in the treatment of this affection. Inactivity and indolence are to be shunned as decidedly favorable to the progress of the malady. Walking, gestation in an open carriage, or, when the patient is old enough, riding on horseback, should be regularly practised when the weather is favorable. The patient should rise early from bed, and retire seasonably in the evening, and particularly avoid the damp and chilling night air.

Frequent and full courses of medicine, added to the vegetable, laxative tonic bitters, must be regarded of primary importance, whether in the treatment of latent or active scrofula—to restore and maintain the integrity of the digestive, perspiratory, hepatic, intestinal functions, and support the general energies of the system. The bark of the wild cherry tree and cranes-bill conjoined, or taken separately, three or four times a day, has been known to cure the worst forms of a scrofulous habit, and is well worthy the notice of any practitioner. They may be taken in substance or in decoction. “Agrimony,” says Dr. Elisha Smith, “taken in tea (both root and herb) for a long time will invariably cure the scrofula.” Burdock, (the root,) the common plantain, bottom or top, and the wild carrot, are articles that claim great merit in the treatment of this complaint—they should be given consecutively in infusion, and also applied locally, in the form of poultice. The test of experience compels us to regard very favorably the leaves of the shumach in scrofula. They should be conjoined with slippery elm and given in decoction, equal to three half pints daily. Previous to its exhibition the bowels should be freely liberated by cayenne and mandrake. These articles should be continued, equal parts, and given every four or five days, to act freely on the bowels. The compound syrup of sarsaparilla forms a very powerful auxiliary remedial agent in this disease. Slippery elm wet up, or made into a poultice by a strong decoction of wild cherry tree bark, makes an excellent local application.

Whatever topical applications may be employed, and whether the local affection consists merely in an enlargement of the lymphatic glands, or in ulcerations, it must not be forgotten that our main reliance should be placed upon constitutional treatment.



## DISEASED MESENTERIC GLANDS.

CHILDREN of a scrofulous habit are very often affected with a diseased state of the mesenteric glands: the little patient usually complaining of a deep-seated lancinating pain within the abdomen, which gradually enlarges, while the other parts of the body are emaciated. The countenance becomes altered, the eyes seem glassy and sunk in their sockets, the nose is sharpened, the cheeks are of a marble whiteness, unless when they are flushed with hectic fever, and the whole body is indeed of the same hue. Sometimes the lips are swelled and of a deep red color, and sometimes the angles of the mouth are beset with small ulcers. The state of the bowels is variable, though more commonly relaxed than otherwise. When they are relaxed, the stools consist chiefly of frothy mucus tinged with bile, by which discharge an excoriation of the verge of the anus is now and then produced.

Although the appetite is tolerably good, nay often voracious, in children whose mesenteric glands are thickened and diseased, neither health nor strength result from it; the more food that is taken the worse is the child generally, as it oppresses without nourishing the system.—Until the obstructions are removed, no healthy action can therefore take place.

In the advanced stage of the disease the child is fretful, peevish, and inactive. There is usually an accession of fever towards the evening, the pulse being at that time generally about 120, while at other times of the day it is seldom less than 100 in a minute. There is but little thirst, and the tongue suffers no change, except perhaps being now and then streaked with white at the sides. The skin is dry to the touch and rough, and the cuticle is not unfrequently thrown off in scales.

It has been supposed that a connexion frequently exists between chronic peritonitis and a diseased state of the mesenteric glands.

This diseased state of the mesenteric glands is to be distinguished from enteritis by there being no vomiting or difficulty in procuring evacuations with the ordinary quantity of medicines, and but little pain being perceived on pressure; and it may be known from the *febris infantum remittens*, by the accession of fever being attended with restlessness rather than an inclination to sleep; by the excretions not being particularly changed from their natural appearance; by the accession of fever occurring only in the evening; and by the duration of the complaint: whereas in the remitting fever the paroxysms are attended with drowsiness; the evacuations are unnatural both in smell and color; the accessions of fever are very irregular, as well in their recurrence as in their duration; and the disease has more the character of an acute than of a chronic one.

The disorder attacks children from the age of a few months to ten or twelve years; and the earlier it appears the greater will be the danger. In all ages the prognostic should be guarded, and for the most part be unfavorable; for the disease is generally far advanced before it becomes an object of medical attention, owing to its gradual progress, and being attended with scarcely any pain at first. An improvement of the color

and look of the countenance, the evening accession of fever being less severe and its duration shortened, increase of the flesh and appetite, and a diminution of the size of the abdomen, are to be regarded as favorable signs. The most unfavorable symptoms are, a rapid increase of the emaciation, the evening accession of fever being severe and continuing through most of the night, the abdomen being much enlarged and tense, and the cuticle peeling off.

*Treatment.*—Courses of medicine, laxatives and tonics.

It is of the utmost importance in cases of diseased mesenteric glands to ensure the healthy state of the chylopoetic viscera, and the proper digestion of the food. By such treatment we remove a concurring cause to the prejudicial effects of this state of the glands upon the constitution of the patient. We thereby afford an opportunity for as much nutritious matter to be carried into the system as is compatible with the existing disease.

Exciting the surface of the body to healthy action by vapor bathing every night, and employing frictions night and morning over the whole of the abdomen, will greatly assist and expedite the cure.

The diet should be milk, gruel, sago, and other kinds of farinaceous food, with an admixture of dressed vegetables. Provided the patient exceed the age of two or three years, a small quantity of animal food may be allowed. Animal broths, jellies, &c., may be given to all that are weaned.

Exercise in the open air should be especially recommended, and as that of the sea usually proves beneficial to such patients, where a residence near the coast is practicable it should be adopted. When the disease gives way, and a decided diminution of the fever, pain, and enlargement of the abdomen, has taken place, we may recommend sea-bathing: at first with a bath heated to about 80 degrees, and so reduce the heat gradually, until at last the patient can safely bear the sea-water at its usual temperature.

## VENEREAL DISEASE.

THE part of the world where this disease first originated has been much disputed, some looking upon it as of French extraction, and others supposing it to have been brought from America by the soldiers of Christopher Columbus. Be this as it may, it is certain that it was first observed at the siege of Naples in the year 1493, and that from thence it spread very rapidly throughout France, Spain, Germany, and other kingdoms.

The syphilitic poison is peculiar to the human species, and produces no effect whatever on any of the brute creation, as has incontestably been proved by repeated experiments; from whence we might infer that it was intended, not only as a check against any deviation from the rules of connubial chastity, but likewise as an incentive to the gay and young, to form, at an early period of life, a satisfactory and honorable alliance, by which they may be enabled to gratify the passions implanted in them by nature, and propagate the species, without the risk of disease.

Some practitioners of the present day go so far as to doubt the existence of this virus.

Syphilitic poison cannot, as happens in other eruptive complaints, such as the small-pox, measles, &c., be conveyed in the form of vapor, or, in other words, by breathing air which is contaminated by a person laboring under it. To give rise to syphilis, it is necessary that the matter or poison should be applied to some part which is soft or covered with a mucous membrane, or else to some place where there exists an excoriation, ulcer, or wound.

It has been doubted whether it is possible for the disease to be communicated from the mother to the infant *in utero*. However rare such an occurrence may be, still it is very possible, and many well-authenticated cases are on record to substantiate the fact.

Venereal matter is always sure to occasion a conversion of the mucus of the part, or of the fluids of the wound or ulcer to which it has been applied, into matter similar to itself; and when a sufficient quantity has been produced, it excites an inflammation in the mucous membrane or glands, or in the wound or ulcer, and is then absorbed into the system, but very seldom before. Instances have indeed occurred in practice where absorption has taken place without any apparent effect of this kind being produced: they are, however, very rare.

The infection is almost always sure to show itself first in that part to which the matter is applied; and syphilis most generally arises in consequence of an intercourse between the sexes, so the symptoms usually show themselves in or about the organs of generation. Where a child at the breast communicates the contagion to its nurse, her nipples and breasts will be the parts first affected; and on the contrary, where it is the nurse that infects the infant, then its lips and other parts of its mouth will show the first symptoms of the disease. In like manner, if the infection is conveyed to an accoucher, in consequence of having a slight scratch on any of the fingers of the hand with which he officiates, the wounded part will show the first appearance of the disease by becoming

inflamed; soon after which the glands in the axilla of the same side will swell, be painful, and indurated.

Syphilitic matter, by being applied to the body, produces in the course of time either a local or constitutional disease. By the former is meant an affection confined solely to those parts to which the poison was first applied; and by the latter is to be understood a general taint of the whole system and mass of fluids. Syphilis is therefore generally sure to show itself in both sexes, either as a local affection under the form of a gonorrhœa or chancre, or else as a constitutional one, under that of confirmed lues venerea.

Between a local and a constitutional affection there are, however, certain appearances which are apt to take place in the absorbent vessels and glands nearest in situation to the parts affected with ulceration, and produced, no doubt, by the passage of the venereal matter through them. When the former becomes affected, a hard, red, inflamed line, somewhat similar to a cord, may be felt running all along the back of the penis; and when the latter are affected, which more usually happens, an induration, swelling, and inflammation of the glands themselves will take place, and a bubo will be the consequence. As in most instances the matter is applied first to the parts of generation, in consequence of an intercourse between the sexes; so, of course, the glands of the groins are most usually the seat of this symptom.

By a gonorrhœa, or clap, is to be understood a secretion and discharge of matter from the mucous membrane and glands of the urethra, in consequence of the application of syphilitic matter to them. By a chancre is meant a venereal ulcer, the nature of which is, to be much inflamed, to be very sore and painful, to be unequal at the bottom, to have prominent edges of an ash color, and to show no kind of disposition whatever to heal when left to itself, but, on the contrary, to spread very much; and by a lues venerea is implied an affection of the whole habit and mass of fluids, in consequence of an absorption of the poison into the constitution, which produces certain effects on various parts of the body while diffused in the circulation.

Although a gonorrhœa and a chancre are both of them local affections on their first appearance, still there is this material difference between them, that, as in the first there is a formation of matter without any breach in the solids, and in the latter there is always a breach, so the first may go on for some time without degenerating into an affection of the whole system, and may at last effect its own cure; whereas the latter is never attended with this happy effect; but, on the contrary, affords great reason to fear, that in those cases where the virus is not corrected by a timely use of proper antidotes, an absorption of the matter will take place, and in due time give rise to a confirmed lues.

In mentioning this distinction between a clap and a chancre, it is not to be meant that the former never terminates in, or occasions, a taint of the whole system. In some cases, where a gonorrhœa has been of long standing, it has been attended with this effect, owing most probably to the formation of some little ulcer in the urethra; not but that it may be possible for absorption to take place without ulceration. The application of venereal matter for any considerable length of time to a part that



is of a soft and spongy nature like the glans penis, may in some instances be productive of a constitutional taint without the existence of any previous ulceration.

It has been disputed whether or not the matter secreted in a clap is of a similar nature with that secreted from a chancre, and whether or not it is possible for a person laboring under the one or the other to communicate to a healthy subject a different species of the disorder from that which he is infected. That a gonorrhœa, chancre, and confirmed lues, all arose from the same original infection, may readily be admitted; and that the matter produced both in gonorrhœa and chancre is of the same nature, ought not to be doubted, as daily observation must convince those who are frequently consulted in venereal cases, and who have given themselves the trouble to investigate the nature of the complaint which the person labored under who propagated the infection, that the matter from a gonorrhœa may and often does give rise either to a clap, chancre, or confirmed lues, and that the matter secreted from a chancre will do the same. The event depends, most assuredly, on the state of the parts and the constitution of the patient, together with other accidental circumstances at the time the poison is applied, and not on any difference in the nature of the matter secreted in the one or the other affection.

The doctrine here supported by no means accords with that which has been advanced by Mr. Benjamin Bell, and a few other modern practitioners of eminence; for these gentlemen consider gonorrhœa and lues as arising from different specific contagions. By the greater number of the profession, however, they are still considered as the same; and it appears by Mr. Cross's Report, that the French Surgeons are still of opinion that both are identically the same.

When a person laboring under the venereal disease forms a connexion with another who is free from it, and who happens to have any little excoriation, ulcer, or wound, about the parts of generation, it is probable, that if the poison is conveyed to the healthy subject, it will be most likely to show itself under the form of a constitutional affection; as in this case the matter is applied so as readily to be absorbed into the system, in a manner similar to what happens in the small-pox; whereas if it is applied to a part that is spongy, or to a surface covered with a mucous membrane, and where neither excoriation, ulcer, nor any wound exists, then the most probable consequences will be, either a gonorrhœa or a chancre.

In offering this as an opinion, it is not to be understood that this will invariably be the case. Much (as has already been observed) will depend on the state and irritability of the parts at the time the poison is applied; as also on the habit of the person, and other accidental circumstances.

Another remark which may be added on the nature of the venereal poison is, that there seems to prevail in some constitutions a greater liability to be infected by it than in others; as two men having been connected with a diseased woman in a very short space of time, one of them shall contract infection from her, and the other shall escape with impunity.

*Gonorrhœa*.—No certain rule can be laid down with regard to the time that a clap will take before it makes its appearance after infection has been conveyed. With some persons it will show itself in the course of three or four days; while with others there will not be the least appearance of it before the expiration of a week or two. It most usually is perceptible, however, in the space of from six to twelve days, and in a male begins with an uneasiness about the parts of generation, such as an itching in the glans penis, and a soreness and tingling sensation along the whole course of the urethra; soon after which, the person perceives an appearance of whitish matter at its orifice, and also some degree of pungency on making water.

Here it may be proper to mention, that it is necessary to distinguish accurately true gonorrhœa from that discharge that sometimes takes place from the internal surface of the prepuce, and produced by any thing causing irritation there, or behind the corona glandis, as a want of due cleanliness, warts, &c.

In the course of a few days the discharge of matter in gonorrhœa will increase, considerably, will assume most probably a greenish or yellowish hue, and will become thinner, and lose its adhesiveness; the parts will also be occupied with some degree of redness and inflammation; in consequence of which, the glans penis will put on the appearance of a ripe cherry, the stream of urine will be smaller than usual, owing to the canal being made narrower by the inflamed state of its internal membrane, and a considerable degree of pain and scalding heat will be experienced on every attempt to make water.

Where the inflammation prevails in a very high degree, it prevents the extension of the urethra on the taking place of any erection, so that the penis is at that time curved downwards with great pain, which is much increased if attempted to be raised towards the belly, and the stimulus occasions it often to be erected, particularly when the patient is warm in bed; and so deprives him of sleep; producing in some cases an involuntary emission of semen. The above symptoms denote the presence of a chordee.

In consequence of the inflammation it sometimes happens, that at the time of making water, owing to the rupture of some small blood-vessel, a slight hæmorrhage ensues, and a small quantity of blood is voided. In consequence of inflammation, the prepuce likewise becomes often so swelled at the end that it cannot be drawn back; which symptom is called a phymosis: or that, being drawn behind the glans, it cannot be returned; which is known by the name of paraphymosis. Now and then, from the same cause, little hard swellings arise on the lower surface of the penis, along the course of the urethra: and these perhaps suppurate, and form into fistulous sores.

The adjacent parts sympathizing with those already affected, the bladder becomes irritable, and incapable of retaining the urine for any length of time; which gives the patient a frequent inclination to make water, and he feels an uneasiness about the scrotum, perinæum, and fundament. Moreover, the glands of the groin grow indurated and enlarged, or perhaps one of the testicles becomes swelled and inflamed; in consequence of which he experiences excruciating pains, extending from the seat of

the complaint up into the small of the back, he gets hot and restless, and a small symptomatic fever arises.

Where the parts are not occupied by much inflammation, few or none of the last-mentioned symptoms will appear, and only a discharge, with a slight heat or scalding in making water, will prevail.

In consequence of the inflammation of gonorrhœa extending along the urethra, it sometimes happens that the mucous membrane of the bladder becomes thickened, indurated, and ulcerated, and pours out a considerable quantity of muco-purulent matter, which added to the urine, gives to it the appearance of whey.

If a gonorrhœa is neither irritated by an irregularity of the patient, nor prolonged by the want of timely and proper assistance, then in the course of about a fortnight or three weeks the discharge, from having been thin and discolored at first, will become thick, white, and of a ropy consistence; and from having gradually begun to diminish in quantity, will at last cease entirely, together with every inflammatory symptom whatever: whereas, on the contrary, if the patient has led a life of intemperance and sensuality, has partaken freely of the bottle and high-seasoned meats, and has at the same time neglected to pursue the necessary means, it may then continue for many weeks and months, and on going off may leave a weakness or gleet behind it, besides being accompanied with the risk of giving rise, at some distant period, to a constitutional affection, especially if there has been a neglect of proper cleanliness; for where venereal matter has been suffered to lodge between the prepuce and glans penis for any time, so as to have occasioned either excoriation or ulceration, there will always be danger of its having been absorbed.

Another risk from the long continuance of a gonorrhœa, especially if it has been attended with inflammatory symptoms, or has been of frequent recurrence, is the taking place of one or more strictures in the urethra. There are sure to occasion a considerable degree of difficulty as well as pain in making water, and, instead of its being discharged in a free uninterrupted stream, it splits into two, or perhaps is voided drop by drop. Such affections become, from neglect, of a most serious and dangerous nature, as they not unfrequently block up the urethra, so as to induce a total suppression of the urine.

We may rest assured that inflammation in the urethra is the usual source of all strictures, and for most part this is excited by gonorrhœa; occasionally it has, however, arisen from some other cause producing continued irritation in the parts, as for instance, from some previous disease in the bladder or prostate gland. Most commonly the course of the complaint is this. The gonorrhœa has arisen and gone on unchecked, until, the inflammation being at its height, there is a purulent secretion and probably chlordee; the disease, which was at first seated near the orifice of the canal, has spread backwards; but by the use of appropriate remedies, the pain and other inconvenient symptoms which the patient had experienced are ameliorated: still, however, the irritation does not entirely subside. Some pain and heat in voiding urine are still perceived, and from time to time there flows a gleety discharge; but this gleet is not the effect of mere relaxation of the vessels allowing a pro-

fuse discharge, as is too often supposed—it is the vestige of inflammation, in a milder and more chronic form. When this state of the parts is allowed to continue, a pretty firm stricture will at length be formed. The degree and firmness of the contraction will hold a strict relation to the length of time, and the frequency of the occasional increase of the irritation, pain, and discharge.

Where a gonorrhœa has been of long standing, warty excrescences are likewise apt to arise about the parts of generation, owing to the matter falling and lodging thereon; and they not unfrequently prove both numerous and troublesome.

Having noticed every symptom which usually attends on gonorrhœa in the male sex, it will only be necessary to observe, that the same heat and soreness in making water, and the same discharge of discolored mucus matter, together with a slight pain in walking, and uneasiness in sitting, take place in females as in the former; but as the parts in women which are most apt to be affected by the venereal poison are less complex in their nature, and fewer in number, than in men, so of course the former are not liable to many of the symptoms which the latter are; and from the urinary canal being much shorter and of a more simple form in them than in men, they are seldom, if ever, incommoded by strictures.

With women it indeed often happens, that all the symptoms of a gonorrhœa are so very slight, that they experience no other inconvenience than the discharge: except perhaps immediately after menstruation, at which period it is no uncommon occurrence for them to perceive some degree of aggravation in the symptoms.

Women of a relaxed habit, and such as have had frequent miscarriages, are apt to be afflicted with a disease known by the name of fluor albus, which it is often difficult to distinguish from gonorrhœa, as the matter discharged in both is, in many cases, of the same color and consistence. The surest way of forming a just conclusion in instances of this nature will be, to draw it from an accurate investigation both of the symptoms which are present, and those which have preceded the discharge; as likewise from the concurring circumstances, such as the character and mode of life of the person, and the probability there may be of her having had venereal infection conveyed to her by any connexion in which she may be engaged.

Not long ago it was generally supposed, that gonorrhœa depended always upon ulcers in the urethra producing a discharge of purulent matter—and such ulcers do indeed occur in consequence of a high degree of inflammation and suppuration; but many dissections of persons who have died while laboring under a gonorrhœa, have clearly shown that the disease may and often does exist, without any ulceration in the urethra; so that the discharge which appears is usually that of vitiated mucus thrown out from the mucous follicles of the urethra. On opening this canal in recent cases, it usually appears red and inflamed, its mucous glands are somewhat enlarged, and its cavity is filled with matter to within a small distance from its extremity. Where the disease has been of long continuance, its surface all along, even to the bladder, is generally found pale and relaxed, without any erosion.



*Treatment.*—Gonorrhœa appears to have a natural tendency, if left to itself, to terminate spontaneously. At first, as has already been stated, the matter is thin, and communicates a greenish stain to the linen; but as the inflammation gradually subsides, the discharge becomes thicker, cream-like, and less abundant; and if the general habit is not phlogistic or irritable, and the patient avoids the influence of stimulating causes, the secretion of the gonorrhœal fluid often gradually diminishes, until in the course of six or eight weeks it ceases entirely.

There are few individuals, however, who are willing to delay the use of the remedial measures, or who are sufficiently prudent to abstain from stimulating food and other causes calculated to keep up the phlogistic habit of the system, to obtain such a favorable result; and in most instances, either from injudicious attempts to arrest the discharge, or from a general inflammatory and irritable diathesis, favored by stimulating diet and drink, the disease, if it is not subdued by an appropriate treatment, degenerates into a chronic urethral discharge, consisting of a milky fluid, usually called *gleet*.

During the inflammatory stage of the complaint, it should be treated strictly as a local inflammatory affection, without any regard to the peculiar nature of the inflammation, or the attending muco-purulent discharge.

Full and thorough courses to accomplish this object should be resorted to without fail. Composition and lobelia in small quantities, enough to excite a constant nausea, should be given intermediately to act upon the surface and keep up a free perspiration—at the same time observing a spare diet and perfect quietude. Laxative medicine should also be given to procure three or four dejections a day. Perhaps the best combination is blackroot and mandrake (May-apple) pulverised and mixed equal parts, and one half tea-spoonful to be taken every four or six hours. Slippery elm or flaxseed-tea should also be freely given during the inflammatory stage. The vapor bath will afford essential service, and should be applied every night on the patient's going to bed, and to obtain the greatest possible good thereby, he should continue in the bath three-quarters of an hour, or as long as he can possibly endure it. If chordee should supervene a poultice composed of slippery elm, and lobelia should be applied to the penis as warm as can be borne, and renewed as often as it becomes necessary; and even if chordee should not exist, doubtless, much advantage may be obtained from the poultice during the inflammatory stage of the complaint.

Nothing is more common than the employment of astringent injections, almost as soon as the disease commences; and although the discharge may sometimes be speedily arrested in this way, the consequences are often extremely injurious. "This practice," says Mr. Carmichael, "is attended with such risk of exciting inflammation of the entire urethra and bladder, and all the immediate, as well as the secondary train of evils attendant upon this calamity, that I have no hesitation in saying, that it is a practice that cannot be too strongly deprecated."

As soon as the general and local inflammatory symptoms are in some degree reduced, and the discharge has become thick and more purulent, balsam copaiva, cubeb, or what are called the terebinthinate remedies,

must be resorted to. Almost all writers agree in giving a preference to the *balsam copaiva*, as a remedy in this affection; and when given in large doses, it will, in fact, more frequently put a stop to the disease than any article we possess. To obtain the full advantages which it is capable of affording, it should be given in as large doses as the stomach will bear. The following is an excellent formula for administering this article.

Balsam copaiva, two ounces; essence wintergreen, two ounces; tincture of guaiac, half an ounce; pulverised gum arabic, half an ounce. Table-spoonful to be taken every four hours.

The above should be given until the stomach becomes sensibly affected by nausea, and repeated in frequency and quantity to the extent the stomach will bear it. Mandrake and cubebs pulverised and combined, equal parts, will be found an excellent auxiliary, and may be given in tea-spoonful doses every other night on going to bed. In the great majority of cases this course, if rigidly followed, will establish a radical cure. When, notwithstanding the free and full adoption of this course, the discharge continues, recourse should be had to astringent injections. All or any of the vegetable astringents, recorded in the *Botanic materia-medica*, may be safely employed. A strong infusion of lobelia is reckoned a valuable injection in this stage of the complaint.

It may be proper again, to say, that where there is much irritability or active inflammation of the urethra present, all astringent or irritating injections are highly improper. When used under circumstances of this kind, they are apt to give rise to various distressing affections, particularly to chordee; obstinate inflammation of the body of the penis, neck of the bladder, testes and to strictures in the urethra.

Obstinate cases of gleet are very frequently dependent on the irritation of a stricture of the urethra; and when this is the case, the most effectual measures, should be taken to remove their existence. Full and thorough courses of medicine, with long steamings, have frequently been found very effectual. Quietude and a spare regimen should be observed. The compound syrup of sarsaparilla will prove of great service in this stage of the complaint. Mucilaginous diuretics will also be found to produce a singular advantage. The following are recommended by the best authority: 1st, Take equal parts of slippery elm, the inner bark of the pine, and sumach (the bark of the root) and make a strong infusion, which should be drank freely, constantly, for two or three weeks. 2d, Take pine root, black sumach, yellow poplar, red shank and bayberry, equal parts, and make a strong decoction. Dose, a wine-glassful three times a day.

Among the symptoms attendant on gonorrhœa, it has been mentioned, that phymosis and paraphymosis, are sometimes present. In such cases, it will be necessary to immerse the penis frequently in warm water, or have recourse to emollient fomentations with the after application, composed of slippery elm and lobelia, mixed up in some vegetable astringent, and applied cold. If there is a necessity for the patient to walk about, a suspensory bandage should be applied.

In these cases of phymosis and paraphymosis, accompanied with much inflammation, it will be advisable, previous to adopting the foregoing

measures, to give three or four thorough courses of medicine, and purgatives in the form of those previously recommended.

In phymosis, besides pursuing the plan just recommended, it will be advisable to inject from time to time a little chloride of soda suitably diluted, (say, one part of soda to six of water) or warm milk and water, between the prepuce and glans penis, for the purpose of washing off any matter that may have lodged there, which, if suffered to remain any length of time, might produce ulceration.

Where phymosis is accompanied with chaneres, it will be expedient to inject to the chloride of soda, less diluted, conjoined with a strong preparation of lobelia, myrrh and bayberry. The early attention of the physician should be directed to this form of the disease, and if there should exist an eating ulcer under the prepuce, it would be proper to slit it up.

In consequence of the inflammation running high, and extending a considerable way up the urethra, a tumor, sometimes, forms in the perinæum. In this case, we should endeavor, to disperse it by means, both of a general and topical kind. Courses of medicine, astringent poultices, laxative medicine and a spare regimen.

Sometimes the bladder becomes affected, in consequence of the inflammation extending to it; in which case the patient is troubled with a frequent inclination to make water without the ability of voiding it, together with pain in the organ itself, and a considerable degree of tension over the os pubis. To remove this affection it will be necessary to have recourse to the vapor bath or lobelia clysters.

It has already been mentioned, that in consequence of the inflammation of gonorrhœa extending along the urethra, the mucous membrane of the bladder sometimes becomes thickened, indurated, and ulcerated, so as to occasion it to pour out a considerable quantity of muco-purulent matter, which, added to the urine, gives it the appearance of whey; and moreover, that there is often a discharge of blood also.

The cure of the chronic species of inflammation is to be effected by injecting the bladder with tepid and emollient decoctions; by the use of uva ursi, taken in the dose of a drachm three times a day; by balsamics; and by regular courses.

The prostate gland as well as the bladder is sometimes affected also in consequence of gonorrhœa, and an inflammation arises in it, which is known by a pain and heat in the perinæum extending into the rectum, and a frequent desire to make water, without the ability of voiding more than a few drops at a time. To obviate this we should make use of topical fomentation, poultices, protracted steamings, wilting emetics and clysters.

It seldom happens that a hæmorrhage of any consequence takes place in gonorrhœa; but when there does, it is to be suppressed by injecting sedatives and astringents into the urethra.

Practitioners who aim at popularity by endeavoring to make hasty cures of gonorrhœa, are much in the habit of employing astringent injections on its first appearance. A frequent consequence, however, of this mode of practice is, that although the discharge is, perhaps, speedily

suppressed, the person is soon afterwards attacked with an inflammation and swelling in one or both of the testicles.

Such a consequence being observed too frequently to arise from this treatment, it seems proper to notice, that previous to a use of astringent injections, we should take care to remove every inflammatory symptom whatever, by a strict pursuance of the foregoing directions; and that in employing them after we have effected this, we ought to make them only of a moderate degree of astringency at first. Any of the vegetable astringents may be conjoined or used separately for this purpose.

There are a few who totally deny that gonorrhœa has a venereal origin; and there are others again who contend that it is a peculiar species of the venereal disease—but at the same time they look on it as a local complaint, in which there is no danger of the system becoming affected by an absorption of the matter. They moreover regard it as a disease which will be sure to wear itself out, and at last effect its own cure, and therefore they neglect giving any medicine with the view of counteracting or destroying the syphilitic virus. The impropriety of proceeding in this manner, and the many injurious consequences which frequently result from it, must be too apparent to require dwelling on them.

The matter discharged in gonorrhœa, being in some instances of an acrid and virulent nature, is apt by lodging between the prepuce and glans penis in men, and on the labia pudendi in women, to occasion an excoriation and ulceration in these parts. To prevent such consequences, it will be right to pay strict attention to cleanliness, by washing them at least twice a day. When they take place, we must employ washes of any of the vegetable astringents, tincture of lobelia, third preparation, No. 6, or chloride of soda.

Warty excrescences now and then appear about the external organs of generation in both sexes, as a consequence of gonorrhœa and chancres. They are of various sizes, appearance, and consistence, adhering sometimes by a narrow base and sometimes by a broad one. Wherever a ligature cannot be applied round them, from the broadness of their base, or their being very numerous, they may either be touched with caustic, or be destroyed by the frequent application of other stimulants.

In consequence of inflammation, certain parts of the urethra are apt to become contracted and to occasion strictures, which cause the urine, instead of flowing in a free and direct stream, to split into two, or to be voided drop by drop. So constant is inflammation the forerunner of stricture, that it may be held as a point well established by evidence, that the origin of all strictures in the urethra is in consequence of inflammation, as, that adhesions of the pleura are produced by it. In what is termed spasmodic stricture, it has well been ascertained that the spasm is not in the stricture itself, but it is a spasmodic action of the muscles surrounding the urethra. The most usual way to remove strictures is, by a regular and long-continued use of a bougie; and if made of the elastic gum, bent like a catheter, will be preferable to those in common use. Were all such as are afflicted with these complaints not to neglect this remedy, we should seldom, if ever, meet with those dreadful cases of suppressed urine which occur in practice.



In making use of bougies, it will, however, be necessary to attend to the following rules:

1st. To begin with one of a moderate size, and to increase it very gradually; but previous to its introduction, if made of wax and oil, as those in common use are, it should be held near a gentle fire for a short time to soften it, and then bend it in the shape of a catheter, so as to adapt it to the curvature of the urethra, by which means its passage will be greatly facilitated.

2dly. To employ no force in introducing it; but where we meet with great resistance, to be content with merely suffering its point to press against the stricture for a short time each day, with the hope that by a perseverance in this plan a dilatation of the contracted part may at least be effected.

3dly. To wear it at first only for about half an hour, gradually increasing the time as the parts can bear it without irritation.

4thly. Never to pass it into the bladder, except at first to ascertain the extent of the disease, but merely to carry its point some small distance beyond the stricture or strictures.

5thly. To guard against its slipping into the bladder, by bending its end, and tying it with a cotton thread fastened to the penis.

6thly. To avoid all exercise during its introduction; and,

7thly. To continue its use for a considerable length of time after the disappearance of the stricture, and again to have recourse to it on the least return of obstruction.

In those cases where a bougie even of the smallest size cannot be passed, as likewise in those which are of such long standing as to preclude the hope of a perfect recovery from its use, it has been proposed to make use of caustic. This was first advised by the late Mr. John Hunter, and since his time has been much urged by Sir Everard Home. It appears from the report of this gentleman, that Mr. Hunter, fully sensible of the many inconveniences which attended the application of caustic to strictures in the urethra, by means of a canula, as at first practised, had for some years previous to his death adopted a more improved mode of applying it; and that he himself has continued to make use of it ever since, without having ever found it (as we are informed) to be attended with disadvantage.

This improved mode of applying the caustic is thus managed: take a bougie, of a size that may readily be passed down to the stricture, and insert a small piece of lunar caustic into the end of it, letting the caustic be even with the surface. This should be done some little time before it is required to be used; for the materials of which the bougie is composed become warm and soft by being handled in inserting the caustic; and therefore the hold the bougie has of the caustic is rendered more secure after it has been allowed to cool and harden.

This bougie, so prepared, is to be oiled and made ready for use; but previous to passing it, a common bougie of the same size is to be introduced down to the stricture to clear the canal, and to measure exactly the distance of the stricture from the external orifice; this distance being marked upon the armed bougie, it is to be passed down to the stricture immediately upon withdrawing the other. When it is found in contact

with the obstruction, it is to be steadily retained there with a moderate degree of pressure at first, and less as it is longer continued, since the bougie becomes soft by remaining in the urethra, and readily bends if the pressure is too great.

The period it is to remain must depend a good deal upon the sensations of the patient, and the length of time the parts have been diseased; but on the first trial, it should not be for more than a minute, as it then gives greater pain than on any future application. The pain produced by the caustic is not felt so immediately as it would be natural to expect: the first sensation arises from the pressure of the bougie on the stricture, a little after there is the feeling of heat, and then the parts become painful.

As soon as the caustic begins to act, the surgeon who applies it is often made sensible of it by the smaller arteries of the parts beating with unusual violence, which is very distinctly felt by the finger and thumb that grasp the penis.

After the caustic has been withdrawn, it is desirable that the patient should make water, as in that way any of the remains of the dissolved caustic are washed off; but it sometimes happens that no water will flow at the first effort. When that is the case, it should not be urged, as it is not of any great consequence.

It happens not unfrequently, that at the first time of making water some blood passes along with it; this is also of no bad consequence, but is rather favorable; as when it has occurred, the stricture usually proves to be so far destroyed, that at the next trial the bougie passes on to the bladder. Every other day appears, in general, to be as often as it is prudent to apply the caustic.

By this mode of arming the bougie, strictures in the membranous part of the urethra may have caustic applied to them, which cannot be done by a silver canula, unless made flexible, and even in that state it is liable to many objections.

*Primary ulcers, or chancres.*—At an uncertain period, varying from a few days to several weeks after an impure venereal intercourse, one or more small pimples, excoriations, or ulcers, preceded, usually, with an itching in the part, appear on some part of the genital organs, most commonly on the internal surface of the prepuce, the corona glandis, the glans, or on the frænum; and occasionally on the external surface of the prepuce, skin of the penis, scrotum, or thighs in men; and in females, on the internal or external surface of the labia pudendi, on the clitoris, the nymphæ, in the vagina, or on the thighs.

*The true syphilitic chancre* is thus described by Mr. Hunter—"The sore is somewhat of a circular form, excavated, without granulations, with matter adhering to the surface, and with a thickened edge and base. This hardness and thickening is very circumscribed; not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly." When examined, by pressing the chancre between the fingers, it will be found that the whole excavated surface of the ulcer is surrounded by a hard or indurated basis. In some instances, a small indolent ulcer is seated as it were in an indurated knob on the glans; and occasionally indurated tubercles passing deep beneath the surface,

with scarcely any visible ulceration, will be followed by constitutional symptoms of syphilis—but in cases of this kind, “we will probably learn, a small ulcer existed at first on the callous part, which healed under the use of some local application.” When the syphilitic chancre is situated on the body of the penis, it presents a dark livid color, without being scooped out or excavated, and the surrounding parts are less indurated than when it occurs on the glans penis. True syphilitic chancre is always of an indolent character—very slow in its progress. The excavated and circumscribed state of the ulcer, its indurated edges and base, and its slow progress, constitute the characteristic marks of the syphilitic chancre; but it must not be forgotten, that almost any sore situated on the glans penis is apt to acquire a more or less indurated condition from being frequently irritated by improper applications; and hence, “in forming a diagnosis, we should always take into consideration the previous management of the ulcer.”

*The constitutional symptoms* which proceed from the true syphilitic chancre, appear first upon the skin, the throat, and mouth; and finally upon the periosteum, bones, and deep-seated parts. The true syphilitic eruptions appear in distinct circular patches, from a few lines to half an inch in diameter. They are slightly raised, and covered with thin, whitish, hard scales, easily separated, leaving smooth, shining, *copper-colored* spots, somewhat elevated above the surrounding skin. In some instances a small white band encircles the base of each disk; and occasionally several of the spots unite, forming large irregular copper-colored patches, with portions of scales adhering to them. These scaly copper-colored spots are sometimes in a great measure confined to the forehead, neck, breast, forearms, legs, and anterior part of the abdomen. Syphilitic eruptions occasionally appear in the palms of the hands and soles of the feet, presenting a very peculiar aspect—namely, masses of dry friable scales, very easily removed, and exposing spots of a livid color, with an indurated state of the skin and subjacent structure.

When the syphilitic patches are situated on parts opposed by another skin—as between the nates, under the arms, between the thighs and scrotum, &c., they do not present a dry and scaly appearance; but an elevated, soft, moist, and flat surface, discharging a thin whitish matter. Sometimes the upper part of the extremities of the fingers and toes become affected, and the nails are gradually separated.

After the eruption has made more or less progress, *the throat also becomes ulcerated*, generally about the tonsils and soft palate. These ulcerations are not preceded by much inflammation or swelling, and the tonsils exhibit ulcerated cavities with well defined edges, similar to the primary syphilitic ulcers on the glans penis. As the disease proceeds, the *periosteum*, the fasciæ, ligaments, and *bones*, become affected; and of the bones, those nearest the surface, as the cranium, clavicle, and sternum, are most liable to become the seat of its destructive ravages. “The true syphilitic *nodule* is a solid enlargement of the bone,” unaccompanied during the earlier periods of its progress by any discoloration of the skin, nor is their much pain, until it has arrived at a considerably advanced state.

1. *Simple primary venereal ulcer* of Carmichael. This is by far the most

common variety of venereal ulcerations. The simple venereal ulcer commences from three to seven or eight days after the impure sexual connection, by an itching or redness, which is speedily succeeded by a small pustule surrounded with a red margin. In a few days the pustule becomes converted into a thin crust, under which more or less matter collects, and gives rise to considerable pain. The scab gradually enlarges, and acquires a triangular or circular shape, varying in color from yellow to dark brown. This scab soon separates, and exposes an excavated, round, or oval ulcer, with a glossy reddish or dirty yellow color, surrounded by a narrow red areola. The bottom of the sore now begins to fill up; it rises above the level of the surrounding parts, and exhibits a smooth surface, seated on a fungoid basis, without granulations, and of the color of a healthy sore, the base and edge being usually a darker red than the disk of the sore. Between the fourteenth and fifteenth days, the ulcer generally has risen to its greatest height; but the process of ulceration, as well as the surrounding efflorescence, generally cease as soon as the fungoid stage commences. In some instances, the top of the elevated sore extends beyond its base over the surrounding sound skin, giving it the appearance as if a ligature were tied about it beneath the surface. In this state the sore remains stationary for some time, and then gradually and usually slowly declines and heals, the average period of the commencement to the termination of the ulcer occupying from four to six weeks. "Wherever may be the seat of these ulcers, on the inner part of the prepuce, their characters are seldom doubtful after the ninth day; for by drawing the skin well back, and making allowance for the form of the parts, the raised edge and surface cannot escape discovery; for although these may not be plainly discernible all around, they will be so on some one side." These ulcers are particularly apt to excite phymosis, and are frequently accompanied with patchy excoriations on the glans and prepuce, and occasionally with a profuse gonorrhœal discharge.

*The causes of venerola vulgaris* consist of gonorrhœal matter and of other morbid vaginal secretions communicated by the sexual intercourse. With this variety of venereal ulcerations, we may place the "*patchy excoriations*," already mentioned, for they proceed from the same cause, and may exist either conjointly or separately.

Secondary, or constitutional symptoms, sometimes succeed or attend this variety of primary venereal ulcers; but these are always mild, and readily disappear under mild aperient and diaphoretic treatment, or a full course of medicine. These symptoms consist in slight febrile excitement, attended with headache, and aching pains in the joints, and occasionally also in the chest, succeeded by a *papular eruption* on the forehead, chest, and back, and scattered more thinly over the extremities. Fresh crops of these papulæ appear, at the same time that the slight febrile irritation, and nocturnal pains in some of the joints, continue. "The papulæ vary from a pale-red to a deep crimson color," some of them preserving the character of pimples, whilst others are more of a pustular form. They may appear from five weeks to three or four months after the infection. When they are about declining, they become paler, and often assume a copper tint, "while the exfoliation of



the cuticle gives them an appearance of scalliness"—a state in which they may be confounded with the scaly eruption of true syphilis. "But they may be readily distinguished from each other; for when the papular eruption is on the decline, and has assumed a pale-red or copper color, on examining the patient we shall find other spots in their papular or pustular form, which will at once point out the character of the eruption."

The fauces generally become affected, but not with excavated or spreading ulcers. The patient complains of soreness on swallowing; and on looking into the fauces, the entire cavity exhibits a red and oedematous appearance, with swollen tonsils.

† 2. *Venerola superficialis* of Mr. Evans, or the *primary ulcer of the pustular syphilitic eruptions* of Carmichael.—This variety begins with a small pustule, which soon breaks, and forms a crust, under which the cuticle ulcerates in a circular or oval form. When the crust separates, it exposes an ulcer of a reddish-brown surface, on a level with, or somewhat elevated above the surrounding skin, with *raised and well defined edges*. It is free from marginal and surrounding induration, of a granulated appearance, and seldom attended with considerable pain. It varies from the size of a pea to that of a shilling; but when neglected or improperly managed, it sometimes increases to a much greater extent. It occurs most frequently on the external surface of the prepuce and body of the penis, and is sometimes met with on the anterior aspect of the scrotum. In some instances, this variety of ulcer surrounds the orifice of the prepuce, and occasions, when the ulcer heals, a permanent phymosis. It is generally tedious in its progress, and does not manifest any tendency to spread. This ulcer has not the smooth fungous appearance of the former variety, and is strictly defined in its circumference. *Venerola superficialis*, when left to itself, is almost invariably followed by constitutional symptoms. These consist *usually* of a *pustular eruption* coming out in succession, and terminating speedily in scabs and superficial sores, so that, "at the same time, on the same individual, there will appear some new formed pustules, and others in their scabbing stage, with an intermixture of small ulcers, whose crusts have fallen off, and of discolored patches of the skin, where they have healed." Considerable inflammation and ulceration of the tonsils and pharynx, attended with pains resembling acute rheumatism, are particularly apt to follow this variety of primary ulcer. Mr. Evans asserts that he never met with an instance that was not followed by secondary symptoms. Mr. Carmichael thinks that this variety of venereal disease forms "the natural link between the simple ulcer and its consequences, and the phagedenic venereal disease."

3. *Venerola indurata*, or the *indurated sloughing* primary ulcer.—This variety of venereal ulcer is characterised by great derangement of the general health, much inflammation of the part, local pain, a strong tendency to sloughing or destruction of the parts, and by a cartilaginous induration of the base, unless seated on the glans. The situation of this sore is frequently at the duplication of the prepuce behind the corona glandis, in which case the ulcer generally *burrows* deep between the skin and body of the penis. When it is situated on the internal surface

of the prepuce, which is very common, the peculiar hardness of the base is very remarkable ; and the surface of the sore, whether seated on the prepuce or glans, presents a dark, liver colored slough, "which falls off, and is succeeded rapidly by other sloughs, destroying the parts rather in depth than in breadth." When the general and local inflammatory action is very severe, mortification to a greater or less extent is by no means uncommon. Mr. Evans says, that he has "known gangrene to take place as early as twenty-four hours after the appearance of the disease, and in less than seventy-two hours after the venereal connection. When these sores heal, they are apt to leave indurated spots, which are peculiarly disposed to ulcerate again from irritation, or want of cleanliness." This variety of sloughing ulcer is distinguished from the phagedenic ulcer by the presence of the indurated base. The constitutional symptoms commonly show themselves at a very early period, even before the active progress of the ulcer is completely arrested, and do not differ materially from those which succeed the next variety—namely :

4. *The phagedenic primary ulcer* of Carmichael.—This ulcer exhibits an irregular, corroded appearance, without granulations and surrounding indurations. It sometimes spreads rapidly, and causes extensive destruction of the parts in a few days. Sometimes it "creeps on slowly, healing in one part and making progress in another." It is usually seated on the glans near the prepuce, which "it often entirely consumes, and continuing its depredations on the corona and glans, at last effects their total destruction. When this event takes place, the ulceration usually receives a sudden and permanent check ; but in some instances, profuse hæmorrhage occurs before the glans is entirely destroyed, in which case a favorable change usually takes place in the ulcer. Occasionally, though indeed rarely, the disease slowly proceeds until the whole penis is destroyed."

"A southern climate predisposes most to these forms of primary syphilis, which are comparatively rare in the more northern and temperate latitudes. In the south of Europe, the predisposing causes seem to be far more active, and particularly so in their operation upon northern visitors. The crews of our men of war and merchantmen have occasionally suffered very much from this form of syphilis in the Mediterranean, especially on their visits to the Italian and Spanish ports." Persons of a scorbutic and irritable habit—and especially those whose constitutions have been impaired by breathing an unwholesome atmosphere, or by a spare and unwholesome diet, or finally, by long residences in hot climates, are most liable to the sloughing and phagedenic varieties of venereal ulcerations.

According to Carmichael, the secondary constitutional symptoms of the last two varieties of primary ulcer are : tubercles, pustules, or spots of a pustular tendency—degenerating quickly into ulcers, with thick scabs, healing usually from the centre, while the ulceration spreads along the circumference. Strong fever often ushers in this eruption ; but in many cases a general feeling of indisposition, of listlessness, pallid countenance, languid eye, and broken rest, precede for several days, the appearance of the eruption, unaccompanied by distinct febrile movements. In other instances, "nocturnal headaches, tenderness of the

scalp, slight dyspnœa, with soreness of the sternum and of the breast, generally occur previous to the appearance of the constitutional symptoms." *Phagedenic ulcerations* in the throat, tending to destroy the pharynx; the spongy bones of the nose; soft palate and tonsils; *severe and obstinate pains in the joints*—particularly of the knees and wrists; and *obstinate enlargement of the testes*, are among the most common constitutional affections from primary ulcers of this kind. When the ulcers in the throat extend into the larynx, which is not very uncommon, "there is but little chance of saving the patient's life." This occurrence is announced by "a whispering stridulous voice, constant cough, and copious expectoration of viscid matter; restlessness, great anxiety of countenance, emaciation, night sweats, rapid pulse, and all the concomitants of consumption.

*Treatment*.—Reincedial measures in these various forms of *ulcer*, will only vary according to the condition or urgency of the symptoms that may characterise individual cases. The means to be confided in, during the inflammatory stage are, active courses of medicine, frequent steamings, rest in a recumbent posture, low diet, warm emollient poultices, and lobelia and composition, in broken doses, to act on the skin. The ulcers should be frequently washed with an infusion of lobelia, of vegetable astringents, chloride of soda, No. 6, or third preparation.

When the violence of inflammation and the active progress of the ulceration have been moderated, and the ulcer still refuses to heal; or as fast as it heals in one place, advances in another, the sores should be dressed with the cancer balsam, or an ointment made by simmering together the extract of lobelia and sumach, equal parts, and fresh lard.

Besides these topical applications, it will be necessary to secure the constitution from any venereal taint, or becoming affected at some after period, by having recourse to the sarsaparilla compounds, courses of medicine, and other tonic alteratives.

The *tubercular eruptions* which usually appear on the eyebrows, forearms, back and scalp, and which at last become converted into irregular crusts, leaving ragged, ill-looking ulcers, are in general much improved by courses of medicine and the sarsaparilla syrup.

*A Bubo*.—It has already been observed, that between a local and constitutional affection there often arises a kind of intermediate state; and that, in consequence of an absorption of venereal matter from some surface to which it has been applied, the glands situated nearest to the parts thus affected are apt to become indurated, swelled, and inflamed, and so to give rise to a bubo; and the parts of generation usually coming first in contact with the matter, so the glands in the groins are the most general seat of this particular symptom. In most cases the syphilitic virus is absorbed from a chancre or ulcer in the urethra; but instances have occurred where a bubo has arisen without either gonorrhœa or any kind of ulceration, and where the matter appears to have been absorbed without any evident erosion of the skin or of the mucous membrane.

A bubo comes on with a pain in the groin, accompanied with some degree of hardness and swelling, and is at first about the size of a

kidney-bean, but continuing to increase, it at length becomes as large as an egg, occasions the person to experience some difficulty in walking, and is attended with a pulsation and throbbing in the tumor, and a great redness of the skin. In some cases the suppuration is quickly completed; in others it goes on very slow; and in others again, the inflammatory appearances go off without any formation of pus. In a few instances the glands have been known to become scirrhus.

As many other swellings in the groin, such as a rupture, aneurism, lumbar abscess, and scirrhus affection of the glands, may be taken for a bubo, it will always be advisable in doubtful cases to inquire whether or not the patient has lately been afflicted either with a gonorrhœa or chancre; and whether or not he has lately labored under any other complaint that might have given rise to the swelling. It may likewise be advisable to attend to the progress which the tumor has made. By a due consideration and investigation of these circumstances, we cannot fail to form a just conclusion as to the real nature of the disease.

The following are the characteristics of a venereal bubo: the swelling is usually confined to one gland; the color of the skin where inflammation prevails is of a florid red; the pain is very acute; the progress from inflammation to suppuration and ulceration is generally very rapid; the suppuration is large in proportion to the size of the gland; and there is only one abscess.

A bubo is never attended with danger where the inflamed gland proceeds on regularly to suppuration; but in particular cases it acquires an indolence after coming to a certain length, arising from a scrofulous taint; or, by being combined with erysipelas, it terminates in a phagedenic ulceration, and occasions a great loss of substance. This termination is, however, more frequently met with in hospitals than in private practice, and may partly be attributed to the contaminated state of the air of the wards wherein syphilitic patients are lodged.

The many inconveniences that ensue from allowing a venereal bubo to suppurate, should induce the practitioner to exert his utmost endeavors to prevent it from proceeding to such a state, and to occasion its speedy resolution or dispersion, if possible. To effect this, it will be proper, where the skin is occupied by much redness and inflammation, and the tumor by a throbbing, to give courses of medicine, sudorifics and laxatives; and the frequent application of scattering poultices, should not be neglected.

If a bubo is too far advanced to be dispersed at the time that assistance is applied for, or obstinately continues its course to suppuration, in spite of our best endeavors to prevent it, we are then to assist the formation of proper pus by a full diet, and the application of emollient poultices. When this is formed, the tumor may be opened by a lancet, and the ulcer be brought to a proper digestion by suitable dressings.

In those cases where there prevails a scrofulous disposition, it frequently happens that the sore does not heal kindly, but, on the contrary, spreads from the glands to the cellular substance, inflames the skin and contiguous parts, assumes a foul spongy appearance, and is accompanied by much pain and a discharge of a highly acrid matter; or should the



ulceration heal in part, it shortly afterwards breaks out in another, and becomes extensive.

Buboes in scrofulous habits, or when accompanied with erysipelatous inflammation, are very apt to degenerate into phagedenic ulcerations, which extend in a short time over a considerable space, and not unfrequently lay bare a large portion of the thigh and lower part of the abdomen, and even the testicles themselves.

See foregoing treatment of ulcers.

*The constitutional disease.*—A constitutional taint is the third form under which it has been mentioned that the syphilitic poison is apt to show itself, and which always arises in consequence of the matter being observed, and carried into the circulating mass of fluids. The absorption of it may, however, take place in three ways:

1st. It may be carried into the circulation without producing any evident local effect on the part to which it was at first applied.

2dly. It may take place in consequence of some local affection, such as either gonorrhœa, chancre, or bubo: and,

3dly. It may ensue from an application of the matter to a common sore or wound, similar to what happens in inoculating for the small-pox.

The most general way, however, in which a constitutional taint is produced, is by an absorption of the matter, either from a chancre or bubo.

When syphilitic matter gets into the system, some symptoms of it may often be observed in the course of six or eight weeks, or probably sooner; but in some cases it will continue in the circulating mass of fluids for a few months before any visible effects are produced. The system being completely contaminated, it then occasions many local effects in different parts of the body, and shows itself under a variety of shapes, many of which put on the appearance of a distinct disease. We may presume that this variety depends wholly on the difference of constitution, the different kinds of parts affected, and the different states these parts were in at the time the matter or poison was applied.

The first symptoms usually show themselves on the skin, and in the mouth and throat. When the matter is secreted principally in the skin, reddish and brownish spots appear here and there on its surface, and eruptions of a copper color are dispersed over different parts of the body, on the top of which there soon forms a thick scurf or scale. This scurf falls off after a short time, and is succeeded by another: and the same happening several times, and at length casting off deep, an ulcer is formed which discharges an acrid fetid matter.

When the poison is secreted in the glands of the throat and mouth, the tongue will often be affected, so as to occasion a thickness of speech: and the tonsils, palate, and uvula will become ulcerated, so as to produce a soreness and difficulty in swallowing, and likewise a hoarseness in the voice.

The tonsils are more usually affected with syphilitic ulceration than the uvula or velum palati, though the affection may spread to these from the tonsils. The ulcer of the latter is an excavation, as if a piece was scooped out; the sore has an uneven, jagged, foul appearance, with an

erysipelatous redness on a hard, elevated, defined border; the ulcer is commonly covered with a whitish or brown slough; it is progressive, and, like the rest of the syphilitic symptoms, it is not curable by the powers of the constitution. Generally there is not much pain nor much enlargement attendant on this form of the disease; in other respects the sensations do not materially differ from those produced by ulceration of the throat proceeding from other causes.

If the disease affects the eyes, obstinate inflammation and sometimes ulceration, will also attack these organs.

The matter sometimes falls on deep-seated parts, such as the tendons, ligaments, and periosteum, and occasions, hard, painful swelling to arise, known by the name of nodes.

When the disease is suffered to proceed, and is not counteracted by proper remedies, the patient will in the course of time be afflicted with severe pains, but more particularly in the night time; his countenance will become sallow; his hair will fall off; he will lose his appetite, strength, and flesh; his rest will be much disturbed by night, and a small fever of a hectic kind will arise. The ulcers in the mouth and throat being likewise suffered to spread, and to occasion a caries of the bones of the palate, an opening will be made from the mouth to the nose; and the cartilages and bones of the nose being at length corroded away, this will sink to a level with the face.

It now and then occurs that primary symptoms followed by secondary ones present themselves, all closely imitating syphilis in its primary and secondary stages, and yet are not venereal. Symptoms resembling the secondary appearances of syphilis occur also without any preceding primary symptom, and turn out not to be venereal. In some of the cases the symptoms go off, and the patient gets well without any remedy. Mr. Hunter has remarked, that undescribed diseases, resembling the venereal one were numerous; and Mr. Abernethy has drawn the attention of medical men by his remarks on diseases resembling syphilis.

Some constitutions will bear up for a considerable time against the disease, while others again will soon sink under the general weakness and irritation produced by it. If the disorder is recent, and the constitution not impaired by other diseases, a perfect cure may easily be effected; but where it is of long standing, and accompanied with the symptoms of irritation which have been mentioned, the cure will prove tedious, and in many cases uncertain.

The general appearances to be observed on dissections of those who die of lues, are caries of the bones, but more particularly those of the cranium, often communicating ulceration to the brain itself; together with enlargements and indurations of the lymphatic glands, scirrhus of several of the organs, particularly the liver and lungs, and exostosis of many of the hardest bones.

*Treatment.*—Courses of medicine, vapor bathing, the alterative syrups, and tonics. If eruptions appear and gradually form ulcers, the application of the remediate rules before noticed will be found most effectual.

## YAWS.

This is a very common disease among the negroes in our sugar-colonies, and imported, no doubt, originally from Africa. It never spreads by miasma floating in the air, but may be quickly propagated by cohabiting or otherwise coming in frequent contact with such as are affected by it; hence, although white people do not seem so susceptible of its influence as those of color, they nevertheless sometimes become tainted.

It may likewise be communicated by the application of matter from a yaw pustule or sore to a wound in a person who has not before had the disease; and it is no uncommon occurrence for negroes to inoculate themselves with the view of obtaining a long exemption from labor.—It is one of those complaints which affect the same person but once in his lifetime.

The yaws are sometimes preceded by pains in the limbs which somewhat resemble those of rheumatism, and are particularly severe round the joints: these pains are attended with languor and debility, and frequently continue for many days without any further appearance of disease. After a time these precursory symptoms are succeeded by a degree of pyrexia, sometimes attended with rigors, although in other instances the fever is slight and scarcely noticed.

For the most part the patient complains of headache, loss of appetite, and pains in the back and loins, which are rather exacerbated towards evening. When these symptoms have continued for a few days, they are followed by an eruption of pustules more or less numerous, which appear in various parts of the body, but especially upon the forehead, face, neck, arm-pits, groins, pudenda, and round the anus. The eruption of these pustules is not completed over the whole body at one time, neither do they show themselves in any regular succession on the different parts; but while one crop is falling off, a fresh one is making its appearance in another place. Every new eruption of pustules is usually preceded by a slight febrile paroxysm. On the first appearance of the pustules or pimples, they are not larger than a pin's head, but gradually increase until they attain the size of a sixpence, or even of a shilling. The pustules are filled with an opaque whitish fluid, and when they burst a thick viscid matter is discharged, which forms a foul and dense crust or scab upon the surface. From the larger kind of pustules there frequently arise red fungous excrescences of various magnitudes, from the size of a pea to that of a large mulberry: which fruit, owing to their rough granulated surfaces, they somewhat resemble. These fungi, though they rise considerably above the surface of the skin, have but a small degree of sensibility; they never suppurate kindly, but discharge a sordid glutinous fluid, which forms an ugly scab round the edges of the excrescence, and covers the upper part of it, when much elevated, with a white slough. When these eruptions appear upon any part of the body covered with hair, the color of the latter is gradually changed from black to white. In general the number and size of the pustules are proportioned to the degree of eruptive fever. When the febrile symptoms are

slight, there are few pustules; but they are mostly of a larger size than when the complaint is more violent and extensive.

The duration of the yaws is very uncertain, but is generally supposed to depend a good deal on the habit of body at the time of receiving the infection.

In some cases they arrive at their full size and maturity in the space of four or five weeks; but in others they have taken two or three months.

When no more pustules are thrown out, and when those already upon the skin no longer increase in size, the disease is supposed to have reached its height. About this time it happens on some part of the body or other, that one of the pustules becomes much larger than the rest, equalling the size of a half-crown piece; it assumes the appearance of an ulcer, and instead of being elevated above the skin like the others, it is somewhat depressed; the surface is foul and sloughy, and pours out an ill-conditioned ichor, which spreads very much by corroding the surrounding sound skin: this is what is called the master or mother yaw.—If proper attention be not paid to keep the surface of the ulcer clean, the matter becomes very acrid, and when near a bone sometimes affects it with caries.

When the excrescences appear upon the soles of the feet they are prevented from rising by the resistance of the thick hard epidermis, and give so much pain that the person affected is unable to walk. The fungi thus situated are called by the negroes in the West Indies, tubba, or crab yaws. They are sometimes so large as to cover a great part of the sole of the foot; at other times they are no larger than a shilling; like corns, they are frequently affected by different states of the atmosphere, but more particularly by rainy weather.

Where a judicious mode of treatment has been adopted, the yaws, although a very loathsome complaint, seldom proves either difficult or tedious of cure, and even in the worst of cases is never attended with immediate danger; but where the eruptions have been repelled into the system by external applications or the use of mercury has been resorted to, the cure is often greatly protracted, and in some cases rendered uncertain. Where the disease has been suffered to pursue its course without any assistance, foul ulcers of a considerable extent are apt to be formed, which induce great debility, and often occasion a caries of the bones.

Having clearly ascertained the disorder to be the yaws, the negro ought to be sent immediately to some very private part of the estate, where he can have no possible communication with such as never had it. This precaution is by no means sufficiently attended to, as those who labor under the disease are too frequently suffered to associate and mix in friendly intercourse with other negroes, by which means it is propagated from one to another instead of being eradicated.

During the eruptive stage of the disease we are to assist the efforts of nature in determining the noxious matter to the surface of the body by giving some mild diaphoretic, such as composition and broken doses of lobelia; and at the same time the patient should make daily use of the vapor bath, confining himself to a vegetable diet. He ought to be com-



fortably and warmly lodged, and his system invigorated by taking daily exercise proportioned to his strength.

In the advanced stages of the complaint, light courses, gentle tonics, frequent steamings, the third preparation, as outward application, the sarsaparilla compound, and nourishing diet, will form the remediate attention.

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## ELEPHANTIASIS.

ELEPHANTIASIS appears to belong to the class of lymphatic diseases: it attacks the skin and adipose membrane of the lower extremities, and gives to the limbs a bulk so monstrous and a form so hideous, that they have been compared to the feet of an elephant, from which appearance the name has been taken. The disease in general is, however, confined to one leg.

Elephantiasis has generally been supposed to arise in consequence of some slight attack of fever, on the cessation of which the matter falls on the leg, and occasions a distention and tumefaction of the limb, which is afterwards overspread with uneven lumps and deep fissures. Some authors, in treating on this disease, confound and blend it with lepra, in which the constitution is generally affected, the whole of the skin becoming thick, rough, and scaly, and assuming a yellow color, the hair falling off, small elevations arising in different parts of the body, particularly on the face, which in time degenerate into wide-spreading ulcers, that discharge a fetid corrosive matter, and have a dusky red margin, occasioning extreme debility, and inducing hectic fever.

It sometimes comes on gradually without much previous indisposition; but more generally the person is seized with a coldness and shivering, pains in the head, back, and loins, and some degree of nausea. A slight fever then ensues, and a severe pain is felt in one of the inguinal glands, which after a short time becomes hard, swelled, and inflamed.—No suppuration however ensues, but a red streak may be observed running down the thigh from the swelled gland to the leg, and along the course of the lymphatics. As the inflammation increases in the parts, the fever generally abates, and perhaps after two or three days' continuance goes off. It however returns again at uncertain periods, leaving the leg at last very hard, difficult of motion, and greatly swelled with varicose turgid veins, the skin rough and rugged, and a thickened cellular membrane. Scales appear also on the surface, which do not fall off, but are enlarged by the increasing thickness of the membranes; uneven lumps, with deep fissures, are formed, and the leg and foot become at length of an enormous size and hideous appearance.

A person may labor under this disease many years without finding much alteration in the general health, except during the continuance of

the attacks; and perhaps the chief inconvenience he will experience is the enormous bulky leg which he drags about with him. The encumbrance has indeed induced many who have labored under the disease to submit to an amputation; but the operation seldom proves a radical cure, as the other leg frequently becomes affected.

Dr. Hillary observes, that he never saw both legs swelled at the same time. Instances where they have alike acquired a frightful and prodigious size, have however frequently fallen under the observation of many physicians.

From the report of a modern writer, it appears that the inhabitants of Cochin, on the coast of Malabar, are very much afflicted with an enlargement and swelling of one leg, somewhat similar to elephantiasis; and as the disease is not to be met with in other parts of India, it has the appellation of the Cochin leg. The swelling is always confined to one leg, and reaches from the ankle to the knee: the dimensions of the leg in every part being so large as to equal, if not exceed, the thigh of the same person; but no inconvenience or pain is felt in walking.

By Dr. Hendy we are informed that the disease is truly characterized by the appearances it produces on the lymphatic system. These are, almost universally, a certain cord, which is hard or red, (often both,) extending in the ordinary direction of the lymphatic vessels towards the lymphatic gland. The part affected swells and puts on a shining and œdematous appearance; it does not, however, often pit to the touch, though strongly pressed with the finger, except only when the disease is recent; the effect of pressure is then the same as in cases of anasarca. The joint nearest to the affection becomes stiff and contracted in consequence of the neighboring inflammation and swelling.

When the concomitant fever abates after a duration, which varies in different patients, it leaves the local swelling and inflammation, which continue for a few days afterwards. The swelling, indeed, seldom entirely subsides, particularly when the lower extremities are affected.—There are some instances, however, in which these enlargements have totally disappeared, but they are rare.

The lymphatic gland has in several instances been left enlarged and indurated. Sometimes the inflammation in the gland proceeds to supuration. The inflammation that takes place in the lymphatic vessels is of the erysipelatous kind, and sometimes terminates in mortification. At other times, however, it resembles rheumatism, and in several instances abscesses have been formed in the cellular substance. Ulcers which are difficult to cure are in some cases the consequence of these abscesses.

Dr. Hendy conceives, that the lymphatic vessels being inflamed and obstructed, will be incapable of absorbing and transmitting the lymph deposited in the cellular membrane by the exhalant arteries; that an undue accumulation of this fluid in consequence taking place, the skin will be distended; that the great distension will crack the skin and suffer the lymph to ooze through the fissures, and that this fluid drying, occasions the scaly scabby appearances exhibited in those cases. He illustrates his opinion by an appeal to the late Mr. Hewson's experi-

ments, by which we are taught that the lymph deposited in the cavities and vessels of an healthy animal will always jelly on being exposed to the air.

The parts most apt to be affected with this disease are the inferior extremities; but the penis and scrotum are also very frequently the seat of it, and the latter in some cases becomes of an uncommon magnitude. In the sixth volume of the Medico-Chirurgical Transactions, p. 73, a case is recorded in which the tumor measured longitudinally, from the symphysis pubis to its base, 29 inches, circularly 43. It was removed by an operation, and weighed 70 pounds. The patient recovered and lived many years afterwards. Upon examining the tumor, the testicles were found to occupy their natural position; the left one was about the size of a hen's egg; the tunica vaginalis of the right side contained three pints of water, but the testicle was considerably diminished. The right side of the scrotum being opened, the integuments at the upper part were about two inches in thickness; nearer the base they increased to four inches and a half; a fluid oozed from its substance, and the cavity was filled with gelatinous matter and a fluid; on cooling, the latter became gelatinous also.

The occasional cause of the disease is referred by Dr. Hendy chiefly to cold; and he considers the peculiar dryness of the atmosphere of Barbadoes, arising from its being cleared of woods, with which the other West India islands abound, as the circumstance which renders the people of Barbadoes particularly liable to this complaint. What the real cause may be we will not pretend to determine, but think it may be owing more likely to some peculiarity in the waters of that island. The inhabitants of certain districts abounding with saline and mineral springs are more frequently afflicted, we well know, with diseases of the glands in the neck, such as the goitre and Derbyshire neck, than persons residing in other situations.

Although there is some little difference in the appearance of the two affections here described, the Barbadoes disease strongly resembling the chronic stage of phlegmasia dolens, (see this affection,) still both require a similar treatment at their onset.

*Treatment.*—Full courses of medicine, frequent steamings, particularly of the lower limbs, local application of the most pungent liniments, frictions with the dry flannel, and the internal use of the tonics, diaphoretics, and the alterative syrups.

## LEPROSY.

LEPROSY consists in an eruption of copper-colored spots dispersed over various parts of the body, with some degree of insensibility in them, together with a glossy and scaly appearance of the skin, thickening of the lobes of the ears, falling off of the hair, hoarseness of the voice, offensiveness of the breath, and ulcerations in various parts.

Monsieur Sonnini informs us, that the leprosy, whatever may be its nature, is not in Egypt considered as a contagious disease, and that lepers are not there, as in Turkey, secluded from society. The Egyptians take no precautions to preserve themselves from infection, nor do they consider that this indifference is attended with the smallest danger. But this is a great error, for the disease is very readily propagated from one person to another by contact or cohabitation.

The disease arises sometimes from an hereditary taint or predisposition, being in that case entailed from one generation to another; but it more commonly proceeds from infection, communicated either by cohabiting, or otherwise coming in contact with those who labor under it in a high degree. That a predisposition to the leprosy is often derived from the parents cannot be doubted.

The leprosy shows itself in numerous copper-colored spots dispersed over the whole body, which are attended with a degree of insensibility, and these keep increasing gradually both in size and number, perhaps, for some months, without occasioning any great alteration in the general state of health. As the disease advances, however, the skin begins to grow rough and scaly; the features of the face become greatly enlarged, especially above the eyebrows, the hairs of which and the beard fall off; the alæ of the nose swell and become scabby; the nostrils ulcerate; the voice is hoarse, and the pronunciation nasal; the lobes of the ears are greatly thickened, and affected with tubercles and dry scabs; and sometimes ulcers are produced upon the fingers and toes, which at last separate joint after joint; the breath is highly offensive; fetid, virulent sores arise in various parts of the body, which becomes at length a putrid mass; it wastes daily, and nature at last sinks under the weight of misery.

This is the form under which the leprosy is usually met with in warm climates among negroes, a race of people seemingly more liable to its attacks than whites; but in cold climates it always appears under a much milder form, and is never attended with the violent symptoms just enumerated, seeming to be merely a local disease of the cutis, its vessels, and glands.

Although by paying a proper attention to regimen, and administering alteratives, we may be able somewhat to retard the progress of the disease, and thereby prolong the life of the patient, still when the habit becomes generally tainted, all means will be likely to prove inefficacious. When it arrives at the stage of ulceration, it is highly infectious by contact.

In dissecting the bodies of those who have died of leprosy, all the organs have been discovered in a state of putrescency except the heart.



*Treatment.*—If any relief is to be afforded in this disease, it is chiefly to be obtained by the regular and rigid observance of a vegetable diet, commenced on the first appearance of its approach. As soon, therefore, as any symptom of it is observed, the patient should be debarred from fish, butter, and all sorts of animal food whatever, substituting fruits and vegetables of various kinds; and this course ought to be persisted in for the remainder of his life. At the same time that he gives up the use of animal food, he ought also to avoid all heating liquors, such as wine and spirits. Besides paying much attention to diet, he is likewise to take a due proportion of moderate exercise, and to keep his body regularly open by efficient laxatives.

Much advantage however will be derived from frequent courses of medicine, the alterative syrups and the constant use of some vegetable beer. The vapor bath should also be frequently applied; and if the eruptions are troublesome, and more particularly if they assume a putrescent form, the best tonics should be given internally, and the sores kept clean by frequent washing with soap and water, the vegetable astringents, No. 6, and chloride of soda.

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### PLICA POLONICA, OR PLAITED HAIR.

PLICA POLONICA is a disease in which a morbid matter is deposited upon the hair, and binds it together in such a manner that to unravel it is impossible. In Poland, Lithuania, Hungary, Transylvania, Prussia, Russia, and Tartary, it is endemial; but the scalp is not its only seat, for it sometimes extends to the hair of the pubes.

The exciting causes of the disease are uncertain, as neither the air, water, nor food, seem to have any effect in producing it; nor are cleanliness and regular combing of the hair, it is said, any defence against it. Certain it is, however, that it prevails only among the lower class of people, and who are neglectful of personal cleanliness; for the opulent are generally exempt from plica, and the disease is pretty generally met with among the poor who live in filth and misery, particularly among the Jews, a race of people very negligent of cleanliness both in their persons and dwellings. From some observations made by Mr. Frederick Hoffman, surgeon to the Prussian army, it appears that a predisposition to it may be transmitted from parents to their offspring; and he observes, that as no other cause can be assigned for the disease, it is probable that it arises, according to the general opinion, from contagion; a contagion which, like that of psora, can be communicated by contact only.

Plica polonica may be looked upon, however, as a mere local disorder arising from a great length of hair, and neglect of combing it, and produced evidently by sweat, dirtiness, and vermin; for the hair, when kept

short, and due cleanliness is observed, never contracts plica. The military police enforces this on the Polish militia and recruits every year; and if any of them happen to have the plica, their locks are cut off, and their heads shaved without scruple or danger.

We are told by Mons. Alibert, physician to the hospital of St. Louis, at Paris, that as the Poles rarely comb, and scarcely ever wash or clean their hair, which they suffer to grow very long; and as they wear warm fur caps, the disease in question is much favored thereby. By the heat, he says, an afflux of humors is determined towards the head; which thus becomes a common sewer to all the organs of the body, whilst by its nastiness the pores are so obstructed that the exuberant fluids are forced through the canals of the hair. He observes, that plica is sometimes communicated by contagion, and sometimes by suckling, but he has noticed at the same time that strangers are but little liable to be affected by it.

The nature of the disease was narrowly investigated by Baron Larrey, Inspector General of the French Army, when at Warsaw, and he was fully satisfied that it is a local and factitious complaint, produced by dirt and neglect; likewise that it is not contagious, and may be cured with facility, notwithstanding the absurdities which prejudice has set forth to the contrary.

According to Monsieur de la Fontaine, an eminent physician at Warsaw, the proximate cause of the disease seems to be a peculiar morbid matter, which is clammy and acrid, has its seat in the lymph, and is deposited critically upon the hair.

An opinion universally prevalent with the Polish peasants, is, that the disease of a solitary effort of nature to expel a morbid matter from the body, and that to interrupt the course of it would be productive of danger: hence they make no attempt to cure or even palliate the complaint. This opinion is, however, erroneous, as will appear from what I have already mentioned, as well as from the occurrence afterwards recited.

Both sexes have been observed to be equally liable to the attacks of plica. It more usually comes on during infancy than after the age of puberty. Besides the human species, other animals, such as the horse, and those of the canine species, as dogs, wolves, and foxes, are said to be subject to this complaint.

The accession of the disease, we are told, is commonly preceded by general lassitude and heaviness, pains in different parts of the body, particularly in the head and eyes, and some degree of febrile affection, all of which diminish or cease immediately on the appearance of the plica. Most usually the hair of the head alone, is affected, and that only in particular parts. In these the hair grow considerably longer than in the rest, they often seem greatly enlarged in their diameter, and are much knotted and entangled; being also covered with the viscid matter which issues from their roots, and which assists in glueing them together.

In proportion as the quantity of this gluten and the implication of the hair increase, it is still more and more difficult to clean and comb it: hence a degree of malady is produced, and the heat contracts an extremely fetid smell, to which, however, the Polish peasants are so much ac-

customed, that they endure it without complaint or any manifest inconvenience.

In consequence of frequent scratching, the nails of the fingers being imbu'd with the matter, now and then become diseased: they increase in thickness, change their color, and are unequal on their surface.

The disorder frequently continues for life, when neglected; but is not found to be attended with fatal consequences, except perhaps from an injudicious mode of treatment.

This statement clearly points out the absurdity of the opinion entertained by the generality of the Polanders, and shows that the disease in question may be cured with as much safety as *tinea capitis*. It likewise evinces that the remedies which have been advised in the latter may be employed in the former: indeed, *tinea capitis* and *plica polonica* seem to be very similar diseases. For treatment, see *tinea capitis*.

## SCORBUTUS, or SCURVY.

The characteristics of this disease, as affixed by Dr. Cullen, are debility; bleeding of the gums; spots of different colors on the skin, for the most part livid, particularly at the roots of the hairs, occurring in cold countries, after living on putrescent salted animal food, with a deficiency of recent vegetable matter.

The scurvy is a disease of a putrid nature, much more prevalent in cold climates than in warm ones, and which chiefly affects sailors, and such as are shut up in besieged places: owing, as is supposed, to their being deprived of fresh provisions and a due quantity of acescent food, assisted by the prevalence of cold and moisture, and by such other causes as depress the nervous energy; as indolence, confinement, want of exercise, neglect of cleanliness, much labor and fatigue, sadness, despondency, &c. These several debilitating causes, with the concurrence of a diet consisting principally of salted or putrescent food, and foul water, will be sure to produce this disease. It seems, however, to depend more on the defect of nourishment than on the vitiated state; and the reason that salted provisions are so productive of the scurvy is, most probably, because they are drained of their nutritive juices, which are extracted and run off in the brine. As the disease is apt to become pretty general among the crew of a ship when it has once made its appearance, it has been supposed by many to be of a contagious nature; but the conjecture seems by no means well founded. The circumstance arises most probably from the men being alike exposed to the exciting causes of it.

A preternatural saline state of the blood has been assigned as its proximate cause. It has been contended by some physicians, that the prima-

ry morbid affection in this disease is a debilitated state of the solids, arising principally from the want of aliment.

Various theories have been indeed advanced with respect to scurvy. By Sir John Pringle it has been supposed to be owing to a putrescency of the blood. By Dr. Lind, Dr. Blane, and Dr. Millman, it has been looked upon as a disease of debility, having its origin in the weakness of the organs of digestion, or in the gradual diminution of the vital power by the remote causes ; or that it is owing rather to a defect of nourishment than to a vitiated state of it. Dr. Trotter, reasoning from experiments of Dr. Goodwin concerning the action of dephlogisticated air on the blood, infers that the black color of this in scurvy is owing to the abstraction of this principle (dephlogisticated air,) and that fresh vegetables cure the disease by restoring to the blood this lost principle. Dr. Beddoes supposes scurvy to be owing to a gradual abstraction of oxygen from the whole system, just as death is produced by drowning, by withholding all at once the same substance from that blood which is to pass the posterior cavities of the heart. Of the two causes of scurvy, want of fresh vegetables, or want of air sufficiently furnished with oxygen, Dr. Beddoes thinks the latter is by far the most powerful. Captain Cook's unexampled success in preserving his crews from the scurvy during his last two voyages, seems to have been owing in a great measure to his extreme care in keeping every part of the ship well ventilated. The crew on many occasions were reduced to salt provisions, and much longer out of sight of the land than many other ships which have been dreadfully afflicted with the scurvy. In his last voyage there did not appear among the men any symptom of this disorder ; and in his second, only one man had it in any considerable degree.

The scurvy comes on gradually, with heaviness, weariness, and unwillingness to move about, together with dejection of spirits, anxiety, and oppression at the præcordia, considerable loss of strength and debility. As the disease advances in its progress, the countenance becomes sallow and bloated ; respiration is hurried by the least motion ; the teeth become loose ; the gums are spongy, swelled, and bleed upon the slightest touch ; the breath is very offensive ; livid spots appear on different parts of the body ; old wounds which have long been healed up, break out afresh ; severe wandering pains are felt, particularly by night ; the skin is dry ; the urine small in quantity, turning blue vegetable infusions of a green color ; and the pulse is small, frequent, and towards the last intermitting ; but the intellects are for the most part clear and distinct. In some cases of scurvy, and even in its incipient stage, night blindness has been observed as one of the attendant symptoms.

By an aggravation of the symptoms, the disease in its last stage exhibits a most wretched appearance. The joints become swelled and stiff, the tendons of the legs are rigid and contracted, general emaciation ensues, hæmorrhages break forth from the nose, ears, anus, and other parts of the body, fetid evacuations are discharged by stool, and a diarrhœa or dysentery arises, which soon terminates the tragic scene.

Scurvy is usually met with on shore, or where the person has not been exposed to the influence of the remote causes before enumerated, is unattended by any violent symptoms ; as slight blotches with scaly eruptions.



tious on different parts of the body, and a sponginess of the gums, are the chief appearances to be observed.

In forming our judgment as to the event of the disease, we are to be directed by the violence of the symptoms, by the situation of the patient with respect to a vegetable diet, or other proper substitutes, by his former state of health, and by his constitution not having been impaired by previous disorders.

The persons being capable of muscular motion with little reduction of strength, the health not injured by previous disease, the skin moist, the pulse slow, a gentle diarrhœa, the absence of ulceration, and the petechiæ, if any appear, being of a bright red color,—are to be looked upon as favorable circumstances; whereas great prostration of strength, flushed countenance, quick weak pulse, extreme oppression at the præcordia, fetid and involuntary evacuations, petechiæ and macule of a livid color, and profuse hæmorrhages of dissolved blood, denote the highest degree of danger.

Dissections of those who die of scurvy have always discovered the blood to be in a very dissolved state. The thorax usually contains more or less of a watery fluid, which in many cases possesses so high a degree of acrimony as to excoriate the hands by coming in contact with it. The cavity of the abdomen contains the same kind of fluid. The lungs are black and putrid; and the heart itself has been found in a similar state, with its cavity filled with a corrupted fluid. In many instances, the epiphyses have been found divided from the bones, the cartilages separated from the ribs, and several of the bones themselves dissolved by caries. The brain seldom shows any marks of disease.

From experiments made on the blood and urine of scorbutic patients, it appears that three ounces of blood, on cooling, consisted of two ounces of coagulum and one of serum. The coagulum was composed of two parts; that on the top, about the sixteenth of an inch, was of a florid red, and tough; that in the bottom, of a deep red, approaching to black, and easily divided. The serum with respect to color, was not uncommon. Vinegar did not alter the color of the black part of the coagulum. By the addition of lemon-juice, it became somewhat lighter; on the admixture of a solution of nitre in vinegar, it became of a florid red; the same took place with nitre and lemon-juice. By the subcarbonate of ammonia and diluted sulphuric acid, the coagulum was turned black, and was again rendered florid by the addition of nitre in the juice of lemons, and in vinegar.

To counteract the principal remote causes of the disease; viz. the effect of salt provisions, and the want of fresh meat and vegetables, every ship bound on a long voyage should be supplied with an ample store of flour, eggs for puddings, pearl barley, groats, peas, oatmeal, rice, sago, vermicelli, portable soup, potatoes, and other vegetables in season, sour kroust (which is cabbage fermented with vinegar) raisins, currants, prunes, and other dried and fresh fruits, various spices, many kinds of medicinal herbs, as balm, mint, penny-royal, sage, &c.; together with tea, coffee, cocoa, sugar, treacle, honey, Seville oranges made into marmalade, essence and spruce, and fresh wort. High encomiums have indeed been passed on the efficacy of this last by all the navigators who have made

trial of it, and they seem by no means to have been unworthily bestowed ; but as its salubrious qualities are greatly impaired by becoming damp and mouldy, every possible care should be taken to prevent this from happening.

Besides the articles which have been enumerated, the ship should likewise be supplied with a sufficient store of spirituous and fermented liquors ; as rum, brandy, beer, porter, together with wine, cider, vinegar, and other acids, but more particularly the concrete juice of lemons, limes, and oranges, together with these fruits in their natural state. If possible, a milch cow should be embarked, and there ought to be an abundance of live stock.

If it can be avoided, salted provisions should by no means be constantly served out to the crew ; but fresh animal food, with a due proportion of such farinaceous substances as the ship is supplied with, or of such fresh vegetables and fruits as have been procured at whatever ports it may have touched, ought to be delivered out to the men. The vegetable food with which seamen are principally supplied, consists of flour, biscuit, and peas ; and it very frequently happens that a great deal of the former which is served out to crews on board of men of war, is in a decayed state, and by no means equal to the support of their strength. The biscuit likewise which is furnished them is often too old, is wormeaten, and has lost much of its nutritive quality.

The health of seamen may be supposed to depend considerably on the goodness and purity of the water which they drink, as well as on the nutritive quality of their food ; but it too frequently happens, by an inattention in laying in a store of this necessary article, that it very soon becomes both putrid and offensive, and in this state they are obliged to make use of it. Nothing has been found so effectual for perserving water sweet at sea, during long voyages, as well charring the insides of the casks before they are filled. Care ought at the same time to be taken that the casks should never be filled with sea water, as sometimes happens, in order to save the trouble of shifting the ballast, because this tends to hasten the corruption of the fresh water afterwards put into them. When the water becomes impure and offensive at sea, from being ignorant of the preservative effect produced on it by charring the casks previous to their being filled, it may be rendered perfectly sweet by putting a little fresh charcoal in powder into each cask before it is tapped, or by filtering it through fresh burnt and coarsely pulverised charcoal.

Cleanliness on board of a ship is highly necessary for the preservation of the health of seamen ; but the custom of frequent swabbings or washing between the decks, as is too frequently practised, is certainly injurious, and greatly favors the production of scurvy and other diseases, by a constant dampness being kept up.

Dryness, so essential to health and comfort, is now more studied ; and rubbing with hot sand, scraping, and portable fires, have been found much more salutary operations than frequent washing.

The men should be made to air their hammocks and bedding every fine day ; they should wash their bodies and apparel often, for which purpose an adequate supply of soap ought to be allowed ; and they

should change their linen and other clothes frequently. In rainy weather, on being relieved from their duty on deck by the succeeding watch, they should take off their wet clothes, instead of keeping them on and lying down in them, as they are too apt to do.

No seaman laboring under any disease, especially one of a contagious nature, should be suffered to remain among those that are in health. On the contrary, he ought quickly to be removed to the hospital or sick-room, a place which every ship that has a number of men on board should by all means be furnished with; and this should be situated in an airy and dry part of it.

Unless absolutely necessary, it will be improper to permit any of the crew to sleep from on board, when stationed off an unhealthy shore; but when necessity obliges them to do so, for the purposes of wooding or watering, a tent or marquee should be erected, if a proper house cannot be procured; and this should be pitched on the driest and highest spot that can be found, being so situated as that the door shall open towards the sea. Under cover of this, a sufficient number of hammocks are to be suspended for the accommodation of the men by night, as they should by no means be suffered to sleep on the ground.

If the tent happens unfortunately to be in the neighborhood of a morass, or has unavoidably been pitched on flat moist ground, it will be advisable to keep up a constant fire in it by day as well as by night.

In tropical climates, the healthiness of seamen will much depend upon avoiding undue exposure to the sun, rain, night air, long fasting, intemperance, unwholesome shore duties, especially during the sickly season, and upon the attention paid to various regulations and preventive measures. The bad effects of remaining too long in port at any one time, and independent of irregularities, of harbor duties, particularly after sunset, as well as during his meridian power, cannot be too strongly adverted to by the commander of every ship.

A very productive source of disease in warm climates among seamen is, an immoderate use of spirituous and fermented liquors, as they are too apt, whilst under a state of intoxication, to throw themselves on the bare ground, where perhaps they lie exposed for many hours to the influence of the meridian sun, the heavy dews of the evening, or the damp chilling air of the night. The commander of a ship who pays attention to the health of his crew, will therefore take every possible precaution to prevent his men from being guilty of an excess of this nature: and likewise that they do not lie out in the open air, when overcome by fatigue and hard labor.

The different voyages of that celebrated navigator, Captain Cook, as well as that of the unfortunate La Perouse, incontestably prove that by due care and a proper regimen, seamen may be preserved from the scurvy and other diseases which have formerly been inseparable from long sea voyages; and that they can support the fatigues of the longest navigations in all climates, in all latitudes, in the midst of fogs, and under a burning sun.

In all long voyages it ought to be our object not only to find out and employ the most effectual means to cure the scurvy when it shows itself, but likewise to prevent its arising at all; as the taint never fails to give

a fatal or malignant tendency to the other disorders incident to seamen, such as ulcers, dysentery, &c. ; and with this view, our preventive plan ought to commence from the first day on which the sailing stock of fresh vegetables and ship's beer is expended ; since from many experiments it appears, that much greater success is likely to attend our endeavors in this way than by reserving them for the period in which the marks of a scorbutic diathesis begin to manifest themselves.

When, from the want of the proper precautions before pointed out scurvy makes its appearance among a number of men, be it on board of a ship or in a close garrison, we are then to counteract its effects, first, by obviating the putrid state of the system ; and secondly, by restoring it to its former vigor.

The first of these is to be accomplished by a diet of fresh animal and vegetable food, but more particularly the latter, consisting of garden and water cresses, mustard, horse-radish, common radish, scurvy-grass, celery, endive, and lettuces, all of which may be eaten in their crude state ; together with spinach, beet, carrots, turnips, cabbages, cauliflowers, brocoli, asparagus, the young shoots of hops, &c., which may be prepared by any common process of cookery. To these may be added, a free use of ripe fruits, especially those of a subacid kind, such as oranges, shadocks, and others of this class. For ordinary drink, the patient may use milk, or its productions, as whey, butter-milk, &c., or else an infusion of malt or spruce.

Such things are, however, only to be procured on shore, and therefore cannot be obtained for a ship's crew, unless they remain in port. When at sea, other substitutes must be resorted to.

One of the most effectual of this kind has been found to be lemon-juice.

To render its effects more certain, and prevent it from irritating the bowels, we should mix it with a sufficient quantity of water and sugar, which will make a pleasant drink usually known under the name of sherbet. If a due proportion of wine is added, it will render it still more antiseptic. The quantity of juice used during the first three or four days, ought not to exceed two ounces daily, but it may afterwards be increased to three or four *per diem*.

In Dr. Trotter's *Medicina Nautica* is inserted a letter from Mr. A. Baird, surgeon to the Hector ship of war, communicating to him the wonderful benefit derived from the use of lemon-juice in a voyage to and from the East Indies, during which, although the scurvy became very prevalent, he did not lose a single man. His words are, "When I consider the alarming progress which the scurvy was making amongst the Hector ship's company previous to the administration of lemon-juice as a preventive, the sudden check that disease met with afterwards, and the powerful effect of the acid in very bad cases, I think I shall not be accused of presumption when I pronounce it, if properly administered, a most *infallible remedy* both in the cure and prevention of scurvy."

Where the fresh juice cannot be procured, we may substitute with the greatest advantage the citric acid in a concrete form, as first prepared by Mr. Coxwell. We are informed by Dr. Trotter, that he has experienced its powers against scurvy to be equal to any effect he has ever



observed from the recent fruit in its most perfect state. Other practitioners have reported alike favorably of it. It takes from sixteen to eighteen parts of water to bring the concrete acid to the standard of lemon-juice.

In the course of the disease, particular symptoms may arise, which will require separate treatment. Excitement of the general system, or local congestions are to be managed according to rules elsewhere specified, having a due regard to the debility and weakness of the patient.

To answer the second indication of restoring the former vigor of the system, the patient should be put upon a course of the best tonics; breathe a pure, temperate and dry air; take such daily exercise as his strength will admit; use a generous nutritive diet of fresh animal and vegetable food; and lead a life of great regularity and temperance.

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### ICTERUS, OR JAUNDICE.

JAUNDICE is characterized by a yellowness of the skin, more especially observable in the tunica conjunctiva of the eyes, a bitter taste in the mouth, a sense of pain or uneasiness in the right hypochondrium, whitish, or clay-colored fæces, and the urine obscurely red, tinging things dipped into it of a yellowish color.

It takes place most usually in consequence of an interrupted excretion of the bile, from an obstruction which occasions its passing again into the blood-vessels. In some cases it may, however, be owing to a redundant secretion of the bile.

The causes producing the first of these are, the presence of biliary calculi in the gall-bladder and its ducts; inspissated bile; spasmodic constriction of the ducts themselves; and, lastly, the pressure made by tumors situated in adjacent parts: hence jaundice is often an attendant symptom on chronic inflammation or scirrhus of the liver, pancreas, &c., and frequently likewise on pregnancy. The proximate cause of icterus is an absorption or regurgitation of the bile into the vascular system.

Chronic bilious affections are frequently brought on by drinking freely, but more particularly of spirituous liquors; hence they are often to be observed in the debauchee and drunkard. They are likewise frequently met with in those who lead a sedentary life, and who indulge much in anxious thoughts.

A slight degree of jaundice often proceeds from a redundant secretion of the bile; and a bilious habit is therefore constitutional to some people, but more particularly to those who reside long in a warm climate.

By attending to the various circumstances and symptoms which present themselves, we shall in general be able to ascertain with much certainty the real nature of the cause which has given rise to the disease.

We may be assured, by the long continuance of the complaint, and by feeling the liver and other parts externally, whether or not it arises from any enlargement or tumor in this viscus, the pancreas, mesentery, or omentum.

Where passions of the mind induce disease, without any hardness or enlargement of the liver or adjacent parts, and without any appearance of calculi in the fæces, or on dissection after death, we are naturally induced to conclude that the disorder was owing to a spasmodic affection of the biliary ducts.

Where gall-stones are lodged in the ducts, acute lancinating pains will be felt in the region of the parts, which will cease for a time, and then return again ; great irritation at the stomach and frequent vomiting will attend, and the patient will experience an aggravation of the pain after eating. A pain at the top of the shoulder or right arm is another diagnostic of concretions in the gall-bladder and ducts.

When calculi are passing through the common duct into the duodenum, the symptoms are not so obscure and uncertain as when lodged in the gall-bladder. Sometimes the attack is preceded by or accompanied with a sense of coldness in the back and lower extremities. The person is seized with a sudden violent pain exactly where the common duct enters the intestine. The pain is often so circumscribed, that the patient is apt to say he can cover the extent of it with a finger, and sometimes it shoots through the back, and extends up between the shoulders. Persons thus seized cannot endure a recumbent posture, but are obliged to sit up with the body bent forward, which seems to afford a slight mitigation of the pain. In most cases the stomach is so irritable that every thing is immediately rejected. Sometimes bile is brought up, but not always ; neither is vomiting a constant attendant. The intestines are invariably constipated ; indeed the whole canal appears to share in the spasmodic state induced on the duodenum by the irritating cause.

If the bile is completely obstructed in its passage into the intestine, the fæces will be of a light clay-color, and the skin and eyes become yellow, from a regurgitation of the bile into the system. Although the pain is more exquisite than in hepatitis, and is sometimes accompanied with great disturbance in the general system, such as heat of the skin, quickness of the pulse, thirst, white tongue, high-colored urine with a dark-colored lateritious sediment, still inflammation seldom occurs. Sometimes the disorder continues several hours, and then a remission of pain ensues, either in consequence of the calculus entering the duodenum, or otherwise falling back into either of the ducts or gall-bladder. After an interval of some days, or perhaps weeks, the paroxysm possibly returns again, indicating that the obstructing cause has not been removed.

Biliary calculi are of various sizes, from a pea to that of a walnut, and in some cases are voided in a considerable number, being, like the gall, of a yellow brownish or green color. They vary also with regard to their figure and hardness. Some are very rough and angular ; at other times they are oval or round, and their surface smooth. Although these concretions have been generally found in the gall-bladder and ducts,

yet they are sometimes met with in the spongy and cellular substance of the liver.

The experiments made by Dr. Saunders on biliary calculi prove them to consist chiefly of a resinous matter with a little earth (apparently calcareous,) combined with the mineral and volatile alkali.

The jaundice comes on with languor, inactivity, loathing of food, flatulency, acidities in the stomach and bowels, and costiveness. As it advances in its progress, the skin and tunica conjunctiva of the eyes become tinged of a deep yellow; there is a bitter taste in the mouth, with frequent nausea and vomiting; the urine is very high-colored, and tinges linen yellow; the stools are of a gray or clayey appearance, and a dull obtuse pain is felt in the right hypochondrium, which is much aggravated by pressure with the fingers. Where the pain is very acute, the pulse is apt to become hard and full, and other febrile symptoms to attend.

The disease, when of long continuance, and proceeding from a chronic affection of the liver or other neighboring viscera, is often attended with anasarca swellings, and sometimes with ascites. Petechiæ and maculæ sometimes appear in different parts of the body; the skin, before yellow, turns brown or livid; even passive hæmorrhages and ulcerations have broken out, and the disease has in some instances assumed the form of scurvy.

Where jaundice is recent, and occasioned by concretions obstructing the biliary ducts, it is probable that by using proper means we may be able to effect a cure; but where it is brought on by tumors of the neighboring parts, or has arisen in consequence of other diseases, attended with symptoms of obstructed viscera, our endeavors, most likely, will not be crowned with success. Arising during a state of pregnancy, it is of little consequence, as it will cease on parturition. A gradual diminution of the sense of weight and oppression about the præcordia, a return of appetite and of the digestive powers, the stools becoming copious and easily procured, the urine being secreted in a larger quantity, and ceasing to tinge linen of a yellowish color, are to be regarded as favorable circumstances. A violent pain in the hypochondrium or epigastrium, attended with a quick pulse, loss of strength and flesh, with anasarca swellings of the extremities, chilliness, watchfulness, melancholy, or hiccough, denote great danger.

On opening the bodies of those who die of jaundice, the yellow tinge appears to pervade even the most interior part of the body; it is diffused throughout the whole of the cellular membrane, in the cartilages and bones; and even the substance of the brain is occasionally colored by it. A diseased state of the liver, gall-bladder, or adjacent viscera, is usually to be met with. Calculi are sometimes found in the biliary ducts.

As jaundice occurs in almost every morbid condition of the liver, and as its occurrence evidently does not depend upon a specific morbid action of that organ, some physicians have been induced to consider it only as a symptomatic affection. Under the general appearance of jaundice, we ought therefore by a careful investigation to ascertain, as far as we are able, the real condition of the liver; for certainly such a discrimination must appear indispensably necessary, when it is consider-

ed that the mode of treatment must be varied according to the cause by which such an appearance is induced.

*Treatment.*—The cure of the disease, unpromising as it may at times appear, is nevertheless to be attempted, first, by restoring the interrupted passage of the bile through the duct; secondly, by carrying it off by the intestines; and thirdly, by relieving the particular symptoms. Whether the passage of the bile is obstructed by biliary concretions or by spasmodic constriction of the duct, the same plan nearly must be adopted.

Concretions, when of a large size, frequently excite, by their great distension of the biliary duct in their passage through it, not only acute pain, but very often a considerable degree of inflammation likewise.—When this is the case, much fever is apt to attend. To guard against such consequences, it will therefore be advisable, in full plethoric habits, where the symptoms run high, to give thorough relaxing courses; and even after their immediate operation, to keep the system under the influence of lobelia, by broken doses, combined with composition.

The protracted use of the vapor baths, even to fainting, will be found highly serviceable. The patient, during the attacks, should be kept in a state of perspiration by the aid of hot rocks, or bottles of hot water, and the sudorific powders.

If there is any possible chance of pushing forward the biliary concretions, it is obtained by this combination of measures.

In many instances it seems probable that there is not much pain produced whilst a calculus of a moderate size is lodged in the gall-bladder, or even in the biliary ducts, until it arrives at that part where the common duct perforates the intestine; which opinion seems confirmed from cases reported by writers of the first respectability, where biliary calculi have been met with on dissection in the gall-bladder of persons who never were incommoded during their lifetime with any symptoms that indicated the presence of such a complaint.

Where the disease proceeds either from calculi or from spasmodic stricture, it seems rational to presume, that after having pursued the steps before recommended, we may make use of purgatives with much advantage.

With the intention of dislodging biliary concretions, gentle exercise, but more particularly that of riding on horseback, together with frictions, have been much advised; and certainly will be very proper, except during the paroxysms.

Should we discover that jaundice has arisen in consequence of an inflammatory affection of the liver, we must, at an early period, have recourse to the usual means for carrying it off by resolution, noticed under that head.

The symptoms which usually prove most distressing in this disease are, the pain in the epigastrium, sickness at the stomach, and costiveness.

Costiveness is to be removed by gentle laxatives, such as are here advised.

When the disease is of a chronic nature, and attended with anasarous swellings, it will be proper to employ diuretics, as recommended under the head of dropsy, strengthening the general system at the same time with astringent bitters.



In the progress of the disorder, it sometimes happens that a spontaneous diarrhoea arises, and prevents the future absorption of the bile into the mass of fluids. As long as it continues moderate, and induces no debility, it may be allowed to go on; but where it attacks with violence, or takes place in a constitution much injured and enfeebled, it should be checked by having recourse to the means advised under that particular head.

When a putrid disposition shows itself this must be counteracted by proper antiseptics.—(See Scurvy.) In jaundice arising from a scirrhus of the liver, we must adopt the steps recommended in chronic hepatitis.

In cases where we have reason to suspect the obstruction of the bile to be owing to a torpid action of the bile duct, relief will almost always be obtained by two or three courses of medicine, given in quick succession, with the proper consecutive treatment. The following pill has proved very advantageous:

The extract of dandelion one third, the other two thirds, equal parts, of lobelia seeds, cayenne, bitter-root, and goldenseal—two to be taken three times a day.

Or, take of barberry, xantoxylum, goldenseal, bitter-root, poplar and wild cherry tree bark, equal parts, one half ounce—steep the whole in one pint of water, and add one pint of Holland gin. From a half to a full wine-glass may be taken three times a day.

## NYCTALOPIA, OR NIGHT BLINDNESS.

In this disease the sight is perfectly clear and distinct in the day-time, but a total blindness takes place by night, from which occurrence it derives its name.

The disorder is peculiar to the inhabitants of tropical climates and the southern parts of Europe, being rarely, if ever, met with in cold countries; and has been supposed to proceed from torpor of the retina and optic nerves, which suffer so much from the strong reflected rays of the sun by day, as not to be susceptible of the faint or weak light which the night furnishes. It is a frequent concomitant to scurvy between the tropics. In some cases, it is symptomatic of derangement in the visceral organs, but more particularly in the hepatic system.

It becomes apparent towards evening with a dimness of sight, which gradually increases as the night approaches; and the darker it gets, so much the more indistinct does vision become. It is in general unattended by any other symptom, except that perhaps a more than ordinary sense of fulness is now and then perceived in the fore-part of the head and over the eyes.

Nyctalopia seldom proves a disease of much importance, or of long duration; but, on the contrary, generally admits of an easy cure.

*Treatment.*—The internal use of such medicines as is necessary to

strengthen the general system, appear to be the proper remedies in this complaint, especially as the relaxed state of the optic nerves may be dependent on an embarrassed condition of the general health. Lobelia given as an alterative in combination with the bitter tonics seems to be particularly appropriate in this affection.

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## GUTTA SERENA, AMAUROSIS, OR DIMNESS OF SIGHT.

**GUTTA SERENA** (a species of blindness, wherein the eyes remain fair and seemingly unaffected) consists in a dimness of sight, whether the object be near or at a distance, together with the representation of flies, dust, &c., floating before the eyes, and the pupil is generally deprived of its power of contraction.

It is supposed to depend on some affection of the optic nerves; but its causes are nevertheless said to be various; some of which are, from their nature, incapable of being removed. Thus in one case the blindness has been found to be occasioned by an encysted tumor which was situated in the substance of the cerebrum, and pressed on the optic nerves near their origin; in a second, by a cyst, containing a considerable quantity of water, and lodging itself on the optic nerves at the part where they unite; in a third, by a caries of the os frontis occasioning an alteration in the optic foramina; and in a fourth, by malformation of the optic nerves themselves.

In some cases the defect of vision has been attempted to be accounted for by supposing a defect in the optic nerves, disqualifying them for the impression of objects through the eyes to the brain, as upon the minutest inspection by dissection nothing has been discovered, either in the structure of the eyes, or in the state of any of the component parts contributing to the faculty of vision, which could at all obstruct the performance of their proper office.

Mr. Ware, in his Treatise on this disease, mentions, that a dilatation of the arterial circle surrounding the cella turcica (which is formed by the carotid arteries on each side, by branches passing from them to meet each other before, and by other branches passing backward to meet branches from the basilar artery behind,) may likewise be a cause of gutta serena. The anterior portion of this circle passes over the optic nerves, which undoubtedly may therefore become compressed when any enlargement of these vessels takes place.

A dilatation of the artery which passes directly through the centre of the optic nerve to the retina, may, it is presumed, likewise become a cause of defective vision. Mr. Stevenson is inclined to attribute amaurosis to vascular congestion of the capillary vessels of the retina itself, the immediate seat of vision.

The proximate cause of amaurosis is generally allowed to be the insensibility of the retina. A late writer remarks, it will be found that the causes of amaurosis are often those which are productive of increased

determination of blood to the head, and to the eyes especially; and by a series of arguments, he shows that amaurotic blindness may be the consequence of direct inflammation of the retina or of the vascular structure on which it rests. But whilst he establishes this point, he takes care also to mention that it may in some cases arise from local debility, influenced by repletion of the system, obstructed circulation, and from actual loss of power from the natural decay of age, or protracted debility. He, however, considers that excepting when it occurs at a very advanced period of life, it is almost always formed out of some pre-existing disease.

Violent contusions of the head; apoplectic fits; sudden flashes of lightning; frequent exposure to the rays of the sun; severe exercise and strong passions, especially terror and anger; drunkenness; immoderate venery; and all those causes which predispose to nervous and paralytic affections, may give rise to amaurosis. An over-distension of the blood-vessels of the brain, or of the immediate organ, has sometimes been a cause of the disorder.

Gutta serena, although considerably relieved in some instances by appropriate remedies, proves generally an incurable disease.

*Treatment.*—All authors agree that this disease, in its curable and incomplete state, commonly depends on a morbid irritation of the gastric system, sometimes being also complicated with general nervous debility, in which the eyes participate. Hence the chief indications in the majority of recent incomplete cases are to empty the stomach and bowels, then to strengthen the tone of the digestive organs, together with that of the whole nervous system, while at the same time efforts are made to invigorate the action of the nerves of the eye in particular.

Emetics, or full courses, and tonics, completely answer this purpose.

Resolvent powders, composed of composition, bitter-root, and a small portion of lobelia, may be taken every two or three hours.

The patient should have good air, if possible, nourishing and easily digestible food, and take proper exercise.

Periodical amaurosis should be promptly met by full courses and tonics.

In amaurosis arising from a suppression of the menses, the first evident indication is to re-establish the evacuation from the womb, then the above treatment.

Costiveness should at all times be obviated.

## PARACUSIS, OR DEAFNESS.

DEAFNESS is occasioned by any thing that proves injurious to the ear, as loud noises from the firing of cannon, violent colds, particularly affecting the head, inflammation or ulceration of the membrane, hard wax or other substances interrupting sounds; too great a dryness, or too much moisture in the parts; or by atony, debility, or paralysis of the auditory nerves. In some instances it ensues in consequence of preceding diseases, such as fever, syphilis, &c.; and in others it depends upon an original defect in the structure or formation of the ear. In the last instance the person is usually not only deaf but likewise dumb.

It is often difficult to remove deafness, but more especially where it prevails as a consequence of a wound, ulcer, or inflammation of the tympanum. Where it proceeds from malconformation it admits of no cure.

When deafness is occasioned by wax sticking in the ear, or by any defective or diseased actions of the internal organs, a little of either of the remedies here advised may be dropped into it, viz: third preparation or No. 6; or be applied at the end of a small dossil of cotton every morning and night, previously syringing it with a little warm milk and water, or soap and water. If a thin acrid or fetid discharge accompanies the difficulty of hearing, it will be advisable to resort to courses, and the compound syrup of sarsaparilla and diaphoretics.

When the disease proceeds from cold particularly affecting the head, the patient should be careful to keep this warm by night; the effects of which may be increased by putting the feet into warm water previous to his getting into bed, and taking some proper diaphoretic. Indeed from whatever cause the disorder may originate, it will always be proper to keep the head warm.

If deafness seems to be owing to a debility of some part of the organ, or arises in consequence of any nervous affection, it is then to be removed by stimulants dropped into the ear; by drawing sparks with an electrical machine; by galvanism, and by cold bathing.

Where the disease is the effect of fever, it usually goes off as the patient regains his strength.

To assist the hearing of persons who are deaf in a high degree, we may recommend the use of an ear-trumpet, vulgarly so called.

In that species of deafness which arises from an obstruction of the Eustachian tube, Sir Astley Cooper recommends the puncturing of the membrana tympani. He was led to this operation by reflecting that as an aperture in this membrane did not appear to injure the power of the ear, and a small opening would be sufficient to admit a free passage of air to and from the tympanum, perhaps a substitute might be thus easily found for the Eustachian tube, and the membrane by such an aperture be restored to its natural functions. He observes, that there are several causes by which a closure of the Eustachian tube may be produced.

It may arise, first, from a common cold affecting the parts contiguous to the orifice of the tube, and thereby preventing the free passage of air into the tympanum. The deafness thus produced, however, is often only



temporary; but the frequent recurrence of such attacks may produce a permanent enlargement of the tonsils, which by their pressure on the Eustachian tubes will occasion a constant deafness.

Secondly. The scarlet fever causes ulcers in the throat, which in healing frequently close the Eustachian tube, thereby producing lasting deafness.

Thirdly. A venereal ulcer in the fauces, by the cicatrix it produces, often occasions a closure of the Eustachian tube, causing a deafness which nothing but the operation here spoken of can relieve.

Fourthly. He has known the closure of the tube produced by an extravasation of blood in the cavity of the tympanum.

Lastly. He met with one instance of a stricture in the tube, which, although it did not entirely obstruct the passage of the air, yet rendered it extremely difficult. In this the gentleman who was the subject of the disease, in order to enable himself to hear, was under the necessity of forcing air from the mouth into the cavity of the tympanum, which pressed the *membrana tympani* towards the meatus; then by pressing gently on the ear, he forced out a part of the air, which the tympanum contained; thus giving the membrane liberty to vibrate, and producing an immediate increase in the power of hearing.

As the operation will not afford relief in any cases of deafness except such as arise from a closed Eustachian tube, Sir Astley Cooper is anxious that it should be performed in those only which are clearly of that description. The criteria by which he judges whether the tube is closed or open are the following:

First. If the person in whom it is suspected to be closed should feel, in blowing the nose violently, a swelling in the ear from the membrane being at that time forced outward, the tube is open; for when closed no sensation is produced.

Secondly. The Eustachian tube may be closed, yet the beating of a watch may be heard if it be placed between the teeth or pressed against the side of the head; and if it cannot be heard when it rests upon the teeth, this operation cannot relieve, as the power of the auditory nerves must have been destroyed.

Thirdly. It is right to inquire if the deafness was immediately preceded by any complaint in the throat.

Lastly. In a closed Eustachian tube there is no noise in the head like that which is known to accompany nervous deafness. This species of deafness generally approaches in a gradual manner; the person hears better at one time than another; a cloudy day, a warm room, agitated spirits, or the operation of fear, produce a considerable diminution in the powers of the organ. In the open air the hearing is better than in a confined situation; in a noisy than in a quiet society; in a coach when it is in motion, than when it is still. A pulsation is often felt in the ear: a noise resembling sometimes the roaring of the sea, and others the ringing of distant bells, is heard. This deafness begins generally in a diminished secretion of the wax of the ear, which the patient attributes to some unusual exposure of the head to cold: and this continues as long as the disorder remains.

## CANINE APPETITE.

This disease is the direct opposite of anorexia, as the patient is affected with an insatiable and almost perpetual desire of eating, in which if he is not indulged, he is apt to fall into fainting fits.

With its real causes we seem not to be very well acquainted. In some cases it has been supposed to proceed from a morbid acid in the stomach; and in others from too great a sensibility or peculiar affection of its nervous coat. In most instances it ought to be considered as depending more frequently on monstrosity than disease.

In the third volume of the Medical and Physical Journal is reported an extraordinary and well-attested case of this nature in a French prisoner, who, in one day, consumed of

|                 |        |
|-----------------|--------|
| Raw cow's udder | 4 lbs. |
| Raw beef,       | 10     |
| Candles,        | 2      |

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Total, 16 lbs.

Besides five bottles of porter.

It appears from Dr. Cochrane's report of this case, as inspector and surgeon of the prison in Liverpool, where this cannibal was confined, that the fæces were by no means in proportion to the ingesta, and indeed seldom exceeded those of other men; and that with the ordinary allowance of drink, the quantity of urine was not more than a quart a day; neither was it more offensive than that of other men, but there was a constant propensity to exhalation from the surface of his body, and soon after his getting into bed he was usually attacked with such a profuse sweating as to oblige him to throw off his shirt. In this case it is therefore evident that the recrementitious parts of the aliment were evacuated principally by the skin; and the same may probably happen in most cases of this complaint.

Another singular case of voracious appetite has been reported by M. Percy, a surgeon in chief to the French army. A young man from the neighborhood of Lyons, named Tarare, and who early in life belonged to a troop of strolling jugglers, accustomed himself to swallow flints, enormous quantities of broken victuals, baskets-full of fruits, and even living animals. The most alarming symptoms endured in consequence were not sufficient to overcome his dangerous habit, which became at last an imperious necessity.

Enrolled at the commencement of the late war in one of the battalions of the army of the Rhine, he sought for the necessary supply of food around the moveable hospital. The refuse of the kitchen, the remains of the messes, the rejected matters, or corrupted meats, did not suffice him. He often disputed with the vilest animals their filthy and disgusting meal: he was perpetually in search of cats, dogs, and even serpents, which he devoured alive. He was obliged to be driven by force or threats of punishment from the dead room and the places where the blood drawn from the sick was deposited. It was in vain attempted to cure his ravenous appetite by giving him fat, acids, opium, and even pounded shells. The disappearance of a child of sixteen months old

gave rise to horrible suspicions of him, and he fled. Five or six years afterwards he was admitted into the Infirmary of Versailles in a consumptive state, which succeeded to his enormous appetite. He soon after died.

M. Tessier, chief surgeon of the Infirmary, examined the body, notwithstanding that an abominable odor exhaled from it. The stomach was of an extraordinary capacity, the intestines were ulcerated and remarkably distended, and the gall-bladder was of a very large size.

Tarare was small in stature, flabby, and weak; his countenance had nothing ferocious in it. When he had fasted for a time, the skin of his belly could be almost wrapped round him; and when full he appeared as if dropsical. A thick vapor issued in torrents from his mouth; all his body smoked; the sweat flowed abundantly from his head; and, like all other voracious animals, he slept during the time of digestion.

A case of fever attended with inordinate appetite is recorded in the 5th volume of the Medical Transactions of the London College of Physicians. The patient was a young gentleman sixteen years of age, who with all the other symptoms of fever, attended at first with a powerful determination to the head, showed the usual want of appetite and dislike to food (owing to the deprivation of the powers of digestion attendant on almost all pyrexial diseases) until the fifth day, when the most insatiable craving for food came on, and continued during the whole period of the disease, which was extended to upwards of thirty days, with all the ordinary characteristics of typhus. The desire for food came on regularly with the paroxysm of fever, and continued unabated until that subsided, when he usually fell into a profound sleep. A remarkable circumstance in this case was, that the digestive powers of the stomach were equal to the supply of food, and by the aid of active purgatives six or seven copious stools were daily procured, equal in bulk and consistence to those of a strong healthy adult.

*Treatment.*—Where the complaint is evidently the effect of malformation or monstrosity, nothing it would seem could create an alteration; but in those cases in which it is clearly dependent on some isolated morbid affection, relief is generally obtained by the cure of the primary disease.

## FUROR UTERINUS, OR NYMPHOMANIA.

This disease comes on with melancholy, lascivious casting about of the eyes, and frequent sighing; and, as it increases, the face becomes red and flushed, and the woman makes use of libidinous gestures and speeches, and shows an immoderate desire for coition.

It frequently arises either from inflammation of the pudenda, or from an acrimony in the fluids of the parts. In most instances it ought to be considered as a high degree of hysteria, or as a species of madness.

*Treatment.*—When the disease is in consequence of local inflammation, full courses should be immediately resorted to. If it proceeds from acrid matter, the patient must drink plentifully of cooling demulcent liquors. Injections of the same nature may also be thrown up the vagina, and the parts frequently washed with cold water.

The diet must be cooling and light, consisting principally of vegetables and milk, and every thing that might prove an additional stimulus be carefully avoided.

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## IMPOTENCY.

In some cases this disease is owing to an original defect in the organs of generation: but it more usually arises either from topical weakness, brought on by excess in venery or onanism; or from great debility in the system, produced by severe evacuations, preceding diseases, or the want of nutritive food. In a few instances it may be occasioned probably by want of sufficient confidence, or a degree of fear at the time of coition.

Where the disease proceeds from an original defect in the organs of generation, it will not be possible to effect a cure. When it depends upon some disease of the parts, this must be removed by the means which have been pointed out as most proper.

If it arises in consequence of general weakness, the system is to be strengthened by a generous nutritive diet; by cold bathing, both general and topical, and the best tonics.



## STRABISMUS, OR SQUINTING.

SQUINTING is generally owing to one eye being less perfect than the other, on which account the person endeavors to hide the defective eye in the shadow of the nose, that his vision by the other may not be confused. Sometimes the habit is acquired, and cannot afterwards be easily corrected.

Where squinting has not been confirmed by long habit, and one eye is not much worse than the other, we are told the defect may often be obviated by making a child wear, for some hours every day, a piece of gauze stretched on a circle of whalebone over the best eye, in such a manner as to reduce the distinctness of the vision of this eye to a similar degree of imperfection with the other; or the better eye may be totally darkened by a tin cup covered with black silk for some hours daily, by which means it will be gradually weakened by the want of use, and the defective eye will be progressively strengthened by using it.

In most cases of strabismus we shall be enabled to afford essential relief by the simple process of binding up the sound eye every day for two or three hours, so as to oblige the patient to make use of the debilitated organ, and according as it is more or less indisposed, to keep the other more or less veiled, continuing the process until the diseased eye can fully and properly perform its functions.

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IMMODERATE SWEATING.

THIS is equally a symptomatic affection, but it nevertheless sometimes prevails as an idiopathic disease, and then is commonly owing to general weakness and debility, accompanied with a preternatural determination to the surface of the body. It is generally to be met with in the last stage of pulmonary consumption.

The cure is to be effected by covering the body lightly with apparel and bed clothes; by keeping the chamber of a moderate temperature; by determining from the surface of the body, by means of diuretics and gentle laxatives; and, lastly, by strengthening the system by tonic medicines, cold bathing, and the means advised under the head of Dyspepsia, avoiding at the same time too long an indulgence in bed.

## ENURESIS—INCONTINENCE OF URINE.

THIS, though not in general a painful affection, is always a very troublesome and distressing complaint. The urine passes off involuntarily; sometimes constantly, in drops, as it is secreted and conveyed into the bladder; at others, only after a considerable portion has been accumulated in the bladder, the impulse coming on so suddenly and irresistibly, that the utmost efforts of volition are not able to restrain its immediate flow. In some instances the involuntary discharge occurs by day and night, whether the patient be awake or sleeping—in other cases, by far the most common, it takes place only at night during sleep. This affection may, therefore, be divided into three varieties.

1. *Enuresis paralytica*.—In incontinence of urine, from paralysis of the sphincter of the bladder, the urine passes off continually, as it is secreted by the kidneys, without pain, and even without the least sensation of its occurrence. In such cases the diagnosis is not, in general, attended with difficulty. In very old people it is, nevertheless, not uncommon to find the urine to drip off involuntarily, without any particular paralytic affection of the sphincter. These causes occur in the slighter instances of partial retention of the urine, from a weakened state of the expulsive powers of the bladder; for, when the urine accumulates in the bladder to a certain degree of distension, the resistance to a further dilatation of the bladder, in conjunction with the pressure of the abdominal muscles, slowly forces the urine into the urethra, and causes it to pass off *guttatim*.

This variety of incontinence often occurs as a symptom of some general disease. Thus, it is frequently met with in the latter stages of low fevers—in paraplegia and hemiplegia; and it is occasionally the consequence of confusion of the brain, and spinal injuries. Richter observes, that an inability to retain the urine has arisen from plunging into very cold water. Among the local causes of this affection, the most common are—difficult parturition; injuries done to the neck of the bladder by the unskillful employment of obstetrical instruments; a large calculus located in the neck of the bladder; lythotomic operations; great dilatation of the neck of the bladder in the extraction of a calculus.

*The prognosis* in this variety of the disease is generally unfavorable, and when it occurs as a symptom in febrile affections, it is always one of the most dangerous indications. Mere local paralysis of the sphincter of the bladder is indeed not dangerous, so far as the life of the patient is concerned, but it is an exceedingly annoying complaint, and by the urine constantly dripping off, very painful and distressing excoriations on the inner part of the thighs, scrotum, and perinæum, almost always occur.

2. *Enuresis from mechanical causes*, independent of paralysis of the sphincter of the bladder, is not unfrequently met with. Most of the mechanical or organic causes mentioned under the head of *ischuria*, may, under certain circumstances, give rise to incontinence of urine. Tumors passing on the bladder—as the gravid uterus; dropsical or scirrhus enlargement of the ovaria; tumors of the mesenteric glands;

of the rectum, and of the neck of the uterus, have been known to give rise to this affection. It may also be produced by prolapsus uteri; hernia, or prolapsus of the bladder; by the irritation of vesical calculus; tumors and excrescences from the internal surface of the bladder, &c. These causes seem to operate in the production of incontinence of urine by the pressure which many of them make on the bladder, and by the almost constant *nisus* to evacuate the urine, by which the sphincter may at last become so debilitated and relaxed, as to suffer the urine to pass off slowly and involuntarily; and cases have occurred, which arose from ulcerative destruction of a part of the sphincter.

2. There is a variety of incontinence of urine, described by Richter under the name of *enuresis spastica*, which sometimes occurs in very nervous or hysterical individuals, and which may therefore with more propriety be called *nervous enuresis*. The inability to retain the urine occurs in sudden and irregular attacks. The patient suddenly feels a most urgent desire to void the urine, and the impulse is so irresistible, that, in spite of the utmost efforts of volition, the urine immediately passes off without allowing time to withdraw, or even to reach for a vessel. This variety of the affection occurs also occasionally in very young children. Its most common *exciting* causes appear to be—ascarides; hæmorrhoidal affections; suppressed catamenia; gouty irritation; and leucorrhœa. Frequently, however, no obvious causes of this kind are present, and the disease apparently arises from a morbid irritability of the urinary passages, in connection usually with a very excitable or nervous state of the general system.

4. *Enuresis nocturna*.—This is a very common complaint among children, and occurs also occasionally in adults. When awake, the individual object of this affection experiences no inconvenience whatever in this respect; but at night, while sleeping, *and lying on the back*, the urine is apt to pass off, either *involuntarily*, and without the least consciousness of its occurrence, or *voluntarily*, under the influence of a dream. In children, this variety of incontinence of urine is often “associated with some tendency to urinary disease, and very frequently a disposition to gravel; or sometimes, as in young females, with constitutional irritability and weakness; and in advanced life this affection is almost always associated with some organic or other affection of the neck of the bladder or prostate gland.” In those cases where the discharge occurs in consequence of a voluntary effort during a lively dream, the urine, on examination, will almost invariably exhibit “some unnatural property, and most generally a strong disposition to, or actual deposit of gravel. “Hence,” says Dr. Prout, “I have been led to infer that in this species of urinary incontinence, the acrid properties of the urine are chiefly in fault, and that these, favored, perhaps, by the position of the body, and probably, also, by the morbid sensibility of the bladder, excite so vivid an impression on the imagination, as actually to lead to a voluntary discharge of the urine.” That urinary incontinence may occasionally occur in this way, cannot be doubted; but it may justly be questioned whether the causes here assigned are so commonly concerned in the production of the affection as is supposed by the author just quoted. It is certain that we may sometimes prevent the recur-

rence of the evacuation by exhibiting remedies calculated and intended to produce an irritation or tenderness in the neck of the bladder ; a circumstance that does not seem to favor the idea that the affection depends on the irritation of acrid urine. Habit, no doubt, often has a principal agency in keeping up this affection. When children neglect to pass off the urine on going to bed, the bladder is apt to become distended in the course of the night. This stimulus excites the brain, and awakens a lively dream, occupied with a desire to urinate, and the sphincter yields to the instinctive effort to void the urine.

In cases where the urine passes off involuntarily, and without the person being conscious of it during sleep, Dr. Prout thinks that there probably always exists "some morbid condition of the urinary organs," which it is in general extremely difficult to overcome, and continues, often, long after the age of puberty.

*Treatment.*—From the foregoing remarks on the various and very distinct character of the causes and pathological conditions of urinary incontinence, it is obvious, that the modes of treatment proper for its removal must be equally various and diverse in different cases. When the incontinence depends on general palsy, recourse must be had to the treatment mentioned under the heads of paralysis. In instances of urinary incontinence from mere local paralysis of the *sphincter*, without any manifest spinal affection, or organic cause, we must endeavor by tonics and local stimulants to re-excite the activity of the sphincter. Among the means that have been proposed for this purpose, the following are the most important :

The internal use of bayberry, every four hours with the mucilage of slippery elm, or gum arabic. This should be continued, at least, three or four weeks.

Uva ursi is also highly recommended. Any of the astringent tonics may be used, at the same time due regard should be had to the condition of the bowels ; they should not be suffered to remain inactive.

Electricity and galvanism have been employed, with success, in cases of this kind. Stimulating frictions of various kinds will occasionally assist in restoring activity to the sphincter.

In urinal incontinence from mechanical causes, we can seldom do more than palliate the disorder, or procure temporary relief. When it occurs from the pressure of the gravid uterus, nothing but the delivery of the child will in general remove the complaint ; yet, in some instances, incontinence of the urine occurs about the third and fourth month of pregnancy, and after having continued for a time, goes off spontaneously, before the termination of the regular period of gestation.

For the removal of *enuresis nocturna*, a great variety of means have been proposed, but they have not been very often applied with much success. The disease generally disappears, as children approach the age of puberty, and often at a much earlier period ; and this occurs apparently from the powerful influence of a sense of shame, and a determination, during the waking state, to resist the desire to micturate, which occurs in dreams during sleep. Mr. Prout observes, "that when the incontinence in children is associated with gravel, it is of the utmost consequence that this circumstance be attended to ; and that the reme-



dies appropriate for counteracting the formation of these urinary deposits, should be employed before any other means are used to restrain the urinary incontinence"—for without this, almost all other remedies will be in vain. The urine should therefore be carefully inspected, both in its recent state and after it has stood awhile ; and if a sediment either of the lithic acid or phosphatic variety be deposited, recourse should be immediately had to the remedial measures mentioned under the head of *lithiasis*. After this object has become accomplished, we may proceed to the employment of tonics, and some one of the various remedies or modes of management which experience has shown to be capable of doing good.

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### INVOLUNTARY EMISSION OF THE SEMEN.

An involuntary emission of semen during sleep sometimes proceeds from general debility, but is more usually the effect of a weakness of the seminal vessels in consequence either of excessive venery or onanism. In a few instances it may probably be occasioned by a repletion of these vessels.

The disease is often difficult to remove, and in many cases proves incurable.

Its cure, however, is to be attempted by the patient's abstaining from the remote causes depending upon his will ; by a generous and nutritive diet ; by cold-bathing, both local and general ; by balsams ; and other astringent bitters, as advised under the head of *Dyspepsia*.

Where every other means have failed to cure this inveterate complaint, relief has been obtained by marrying and indulging with moderation connubial felicity.

## LEUCORRHOEA.—FLOUR ALBUS, OR WHITES.

This affection consists in a morbid secretion and discharge of a mucus, or muco-purulent fluid, from the vagina; and is, perhaps, the most common disease to which females are subject. It may occur at every period of life, from infancy to old age, but its appearance between puberty and the final cessation of the menses is by far the most common. In some cases the discharge is of so acid a nature, as to produce effects on those who are connected with the woman somewhat similar to venereal matter, giving rise to excoriations about the glans penis and præputium, and occasioning a weeping from the urethra.

To distinguish leucorrhœa from gonorrhœa, it will be very necessary to attend to the symptoms. In the latter the running is constant, but in a small quantity; there is much ardor urinæ, itching of the pudenda, swelling of the labia, increasing inclination to venery, and very frequently an enlargement of the glands in the groin; whereas in the former the discharge is irregular, comes away often in large lumps, and in considerable quantities, and is neither preceded by, nor accompanied with, any inflammatory affection of the pudenda.

*The causes* of leucorrhœa are very various. In general, whatever is capable of relaxing the system, as a luxurious, indolent, and sedentary manner of living; habitual exposure to a humid atmosphere, and want of pure air and wholesome nourishment, are especially calculated to predispose to the occurrence of this disease. Females of a relaxed, leucophlegmatic, and nervous habit of body, are particularly liable to leucorrhœal discharges, whereas those of a rigid fibre, and a robust and muscular structure are, comparatively rarely affected with this disease. Every thing which is capable of causing irritation in the mucous membrane of the vagina, and of establishing a preternatural determination of blood to the genital organs, may excite leucorrhœa. But the tendency of causes of this kind to give rise to the disease, depends nevertheless in a great degree on the previous constitutional predisposition to this affection; for in many healthy, robust, and active females, scarcely any vaginal irritation, from accidental causes, will produce more than a temporary increase of the mucous secretion. In individuals, on the contrary, of an opposite habit of body—particularly when favored by luxurious living and indolence, the slightest additional irritation of the mucous membrane of the vagina will be apt to excite a more or less permanent morbid secretion from this membrane. The following are the most common and powerful *exciting causes* of this disease. 1. *Excessive venereal indulgence*. Prostitutes, even though previously unaffected with gonorrhœa, are rarely free from morbid vaginal secretions of a leucorrhœal character. 2. *Difficult parturition*, or the irritation caused by the employment of obstetrical instruments. 3. *Frequent and profuse menorrhagia* is frequently followed by leucorrhœa, being usually sustained by the same causes or circumstances that gave rise to the hæmorrhagic discharge. 4. *Prolapsus uteri* is almost invariably attended with more or less leucorrhœal discharge, in consequence of the continued vaginal irritation by the dislocated uterus. 5. *Ascarides*, by keeping up a constant irritation in the rectum and neighboring parts, or *by pass-*

ing into the vagina, are no infrequent exciting cause of leucorrhœa in young girls and children. 6. *The abuse of emmenagogues*, particularly when unseasonably employed for bringing on what is often injuriously supposed and treated as tardy menstruation about the age of puberty, often gives rise to obstinate leucorrhœa. 7. *A loaded and torpid state of the bowels*, is a common cause of this complaint in young females. 8. *Tight lacing and dressing about the waist*, by pressing the viscera down upon the uterus, and causing prolapsus, or a descent of this organ from its natural position into the vagina, as well as by impeding the free circulation of the blood in the portal vessels, is a fertile source of leucorrhœa among young and fashionable females. I will venture to say, that of late years, since the preposterous custom of pressing the waist into as narrow a space as cords and steel springs can bring it, has been so general, there are more instances of prolapsus and leucorrhœa among young females than at any other former period, when the abdomen was a little better accommodated with room. 9. *The depressing mental emotions*, by debilitating the general system, and favoring a sluggish circulation in the portal system of vessels, may give rise to the disease. 10. *Metastasis of Rheumatism, &c.*, is, I conceive, much more frequently concerned in the production of this affection than is generally supposed. It is by no means uncommon, to find females, affected with leucorrhœa, to complain of more or less pain in the joints, and I have satisfied myself that the vaginal disease is not unfrequently a purely rheumatic affection. 11. *Self-pollution* is by many of the German writers regarded as one of the most frequent sources of this disagreeable affection in young females. 12. *Atmospheric influences*, particularly vicissitudes of temperature, and a warm and humid atmosphere. It is said that in Holland, where the air is always loaded with much moisture, leucorrhœa is a very common affection. 13. *Suppressed hæmorrhoids*; diseases of the uterus; tumors pressing upon the vagina; mechanical injuries; the intemperate use of spirituous liquors, &c. may all give rise to the disease.

Some females are invariably affected with more or less profuse leucorrhœal discharge for five or six days immediately after the completion of each menstrual evacuation; and others experience the disease only some days previous to each appearance of the menses, remaining in a great measure, or wholly free from it, during the remainder of the menstrual intervals.

*Symptoms.*—In some instances, the discharge has the appearance of the common vaginal mucus. In others it is white, resembling pulverised starch mixed with a mucilaginous fluid. Sometimes it presents the appearance of pus, possessing an acrid and corroding quality. These differences in the appearance of the discharge, indicate the relative degrees of violence of the affection.

In point of quantity also, great diversity occurs in different cases. In some instances it is so moderate as hardly to occasion any inconvenience, whilst in other cases the evacuation is extremely copious. When the discharge is very profuse, and of an acrid quality, the external parts of the genital organs become red, swollen, and painful, and this state of irritation usually extends into the vagina, and even to the mouth of the

uterus, rendering the whole passage, and especially the os tincæ, very tender to the touch.

When the disease is suffered to continue, it seldom fails at last to make an injurious impression upon the whole system. The countenance at length becomes pallid and sickly; the eyes dull, languid, and surrounded by a bluish or lead-colored circle; the eyelids tumid; the mind dejected, discontented, and fretful; the whole system debilitated and sluggish; the extremities cold; the pulse small and feeble, or small, frequent, and somewhat corded; the digestive functions deranged, attended with acid eructations, gastralgia, pains in the back, loins, and lower extremities; the sleep is disturbed by sudden startings and frightful dreams; colic pains in the lower part of the abdomen, constipation or diarrhœa, and pain in voiding the urine.

By degrees the discharge usually becomes more and more copious and purulent; the relaxation and languor of the muscular system increase, whilst the pulse becomes more frequent and irritated. At length, in aggravated cases, the slightest bodily exertions give rise to hurried respiration and palpitation of the heart; and in instances of great severity, the powers of digestion at last become exceedingly weak; nausea and vomiting frequently come on, and finally hectic and rapid emaciations arise. Fortunately, however, cases of this violent character are, by no means, common; the great majority of instances being much less severe, though sufficiently annoying and debilitating, to become a source of much uneasiness and anxiety.

Women who are habitually affected with leucorrhœa, very rarely become pregnant; and where the leucorrhœal discharge is profuse, it may be doubted whether conception can at all take place. In most instances of severe leucorrhœa, the menses are entirely suppressed; and in all cases they are more or less irregular, both in time and quantity. Sometimes they occur at irregular intervals in the form of menorrhagia, but more frequently they appear very sparingly for a day or two, succeeded by an increased flow of the leucorrhœal discharge.

Much discussion has taken place on the question, whether leucorrhœa is a disease of relaxation or debility, or connected essentially with an irritated or inflammatory excitement in the affected parts. It appears, however, that it cannot be properly said to be either a disease of debility and relaxation, or one of irritation or sub-inflammation, in an exclusive sense. That the mucous membrane of the vagina and mouth of the uterus is in a state of irritation and even sub-inflammation in this affection, is indeed not to be questioned; but it must be recollected that irritation or inflammation is by no means incompatible with debility in the same structure. And let it be borne in mind too, that all the efficient remedies for arresting the discharge, are such, as are directly calculated to increase the tone of the vessels which give rise to the morbid secretion.

The increased flow of mucous is unquestionably the result of a morbid action of these vessels; and the immediate cause of this morbid action, consists in that peculiar deranged condition of the vital properties, designated by the term *irritation*. Nevertheless, this irritation does not imply an *increased power* of action; on the contrary, it is very evident, that



the vital energies or powers of action of the irritated vessels, are, in the instance in question, decidedly impaired. In most cases, the mucus membrane of the vagina is, in the commencement of the disease, merely in a state of irritation. In its progress, however, chronic inflammation is apt to occur from the constant action of the acid secretions, or from the accidental supervention of new exciting causes, both of a general and local character.

*Treatment.*—The cure of leucorrhœa is almost always attended with great difficulty ; and protracted and severe cases often continue, in spite of the most judicious and persevering course of remedial management. Although, properly speaking, a local disease, leucorrhœa seldom fails ultimately to derange other organs, and to establish by degrees a general state of ill-health. This, however, occurs only in protracted and severe cases, or in very delicate and irritable habits. In some instances the general health is impaired before the leucorrhœal discharge commences. Whether primary or consequent, however, the general state of health ought always to be especially attended to, as an important preliminary step in the remedial management of this affection. General or constitutional indisposition is always a most serious obstacle to the restoration of particular functions, or the cure of local maladies. In the treatment of the present disease, this circumstance must be especially attended to.

Gentle emetics have been supposed to be of utility in this complaint, not only in cleansing the stomach and bowels, and producing a revulsion of the humors from the inferior parts of the body, and parts immediately implicated, but likewise by their exciting all the powers of the constitution to a more vigorous action.

To strengthen the general system, where the disease is complicated with universal debility, we must have recourse to bitters of an astringent and aromatic nature, such as the compound known by the name of woman's friend, and other stimulating tonics.

The following compound is known also to possess a valuable reputation in female weaknesses of this character. Unicorn, golden-seal, poplar-bark, bayberry and myrrh all finely pulverised and mixed. Half of a tea-spoonful of the powder may be taken every four hours, in a little cold water.

The pains in the back and loins are to be relieved, by the application of a large strengthening plaster over the particular seat of weakness in the back ; and by avoiding a standing posture any length of time, much walking, dancing, or other violent exercise.

The parts should be frequently washed with cold water, as cleanliness is of great importance ; and injections of any of the vegetable astringents should be thrown up the vagina ; they should be made strong, and used night and morning. The lower portion of the abdomen, sides and thighs may be sponged daily with cold water.

Women that are afflicted with flour albus should avoid all the remote cause of the disease, and by no means indulge in the use of tea and other warm slops of a relaxing nature : they should lie on a mattress in preference to a feather bed ; they should avoid too free an indulgence in sensual gratification, and they should rise early, and take such daily exercise as their strength will admit, particularly on horseback. Where

there is much langour, with a considerable degree of chilliness, it is probable that frictions with flannels might afford some relief. In winter they ought to wear a flannel shift or sliders.

If the system is debilitated, the diet should be generous and nutritive, consisting of jellies, eggs, gelatinous broths and light meats.

## CONSTIPATION.

CONSTIPATION is a term of relative import. For the due preservation of health and comfort, it may be laid down as a general rule, that a daily evacuation of the bowels is indispensably necessary. There are, however, exceptions to this rule. It is by no means rare to see individuals who have a natural stool but once or twice in a week; and cases have been reported, in which weeks, months, and, in one instance, seven years elapsed, without the appearance of a stool. These cases, however, are extraordinary, and should not affect the rule, that the bowels should be opened every day.

Constipation of the bowels is generally referable to sluggishness of the peristaltic action of the intestines, or to torpor of the liver. Good ascribes it, in some instances, to excessive action of the intestinal absorbents, by which the fluid portion of the feces is too rapidly removed, and they are left dry, scybalous, and difficult to be evacuated.

The symptoms attending constipation of the bowels are highly disagreeable. The breath is offensive; the mouth dry and out of taste; the tongue furred, more particularly in the morning, and at its root; there is loss of appetite, nausea, headache, flatulence, and distension of the abdomen. The continuance of this affection is apt to induce indigestion, varices in the lower limbs, and piles.

*Causes*.—Costiveness may be produced by an astringent diet, want of fresh air, and active exercise, confinement to any particular posture of the body, neglect of the calls of nature, stricture of the bowels, and other organic disorders of the intestines and liver, and pressure of the uterus during pregnancy.

Constipation is often a constitutional disease, or it may become habitual from the nature and continuance of the causes producing it. The studious, the sedentary, the indolent, and all whose occupation confines them within doors, and especially those who are under the necessity of remaining long in any particular posture of the body, are peculiarly obnoxious to this affection. Females, from their want of active exercise in the open air, and during the period of pregnancy, from the pressure of the impregnated uterus upon the bowels, are particularly subject to constipation.

*Treatment*.—In attempting the relief of constipation of the bowels, it should be borne in mind, that simple and dietetic means will, in many instances, be sufficient to accomplish a complete cure. Ripe fruits, such as apples, peaches, pears, prunes, figs, gooseberries, strawberries,

possess aperient properties, sufficient, in many instances, to overcome the most obstinate habitual constipation. Boiled vegetables are also proper articles of diet. The brown bread made of unbolted flour is a favorite remedy in this disease, and rarely fails in procuring regular and natural stools. All stimulating and astringent articles, such as cinnamon, nutmegs, &c. are injurious, and should be sedulously avoided. Meat should be eaten sparingly and under-done : beef, mutton, fowls, and the various kinds of game, are the most proper animal food.

Exercise is also an important remedy in this affection. It should be regular, active, and in the open air : walking, or riding on horseback will, in general, prove most salutary.

Above all, however, we should never lose sight of the necessity of a regular attempt at stool. This will frequently overcome attacks of this disease which have resisted every other means. An attempt at evacuation should be made daily at a certain hour, and although for a time we may be disappointed, yet perseverance will ultimately overcome the habit and relieve the disease.

Should the above treatment fail, the operation of cathartics may be greatly aided by the administration of injections. A small portion of capsicum and bitter-root, equal parts, will be found very advantageous, given at suitable intervals, to create a permanent and healthy action of the bowels. The cold infusion of boneset, given in repeated small doses, possesses great merit, where the bowels are habitually confined ; relief, is also said, to be frequently obtained by the patient taking a raw egg, every morning on an empty stomach.

But should a very severe constipation be the result of adventitious circumstances, and resist the ordinary means of relief ; the application of the vapor bath, and two or three lobelia injections, will never fail to produce the desired purpose.

## ISCHURIA ET DYSURIA, OR A SUPPRESSION AND DIFFICULTY OF VOIDING URINE.

WHEN there is a frequent desire of making water attended with much difficulty in voiding it, the complaint is called dysuria or strangury ; and when there is a total suppression of urine, it is known by the name of ischuria. Both ischuria and dysuria are distinguished into acute when arising in consequence of inflammation, and chronic when proceeding from any other cause, such as calculus, &c.

The causes which give rise to these diseases, are, an inflammation of the urethra, occasioned either by venereal sores or by a use of acrid injections, inflammation of the verumontanum, Cowper's gland, prostate gland, bladder, or kidneys, considerable enlargements of the hemorrhoidal veins, a lodgment of indurated feces in the rectum, spasm at the neck of the bladder, exposure to cold, the absorption of cantharides

applied externally or taken internally, excess in drinking either spirituous or vinous liquors, or particles of gravel sticking in the neck of the bladder, or lodging in the urethra, and thereby producing irritation.—Gout, by being translated to the neck of the bladder, will sometimes occasion these complaints. In many instances the obstruction to the flow of urine is in a great measure owing to a diseased action of the muscles; in some of them it is entirely to be attributed to this cause.

A very frequent cause, however, of both dysuria and ischuria is, an enlargement or other diseased state of the prostate gland, a complaint with which men in advanced life are very apt to be afflicted. It is usually excited by full living of every kind, inebriety, indulging to excess with women, or producing frequent excitement in the seminal vessels by masturbation, severe attacks of gonorrhœa, a confined state of the bowels, and exposure to cold. Indeed, whatever increases the circulation of the blood in these parts beyond the healthy standard, may become a cause of inflammation in this gland, the blood vessels of which lose their tone in an advanced period of life.

From various dissections made by Sir Everard Home, he is of opinion, that when the prostate gland becomes diseased, it is not its body or lateral portions which in general are principally enlarged, but its middle lobe, which gradually becoming of an increased size, presses inwards towards the cavity of the bladder in the form of a nipple, pushes the internal membrane of the bladder before it, obstructs the flow of urine, and gives rise to dysuria and tenesmus, with many constitutional symptoms.

Dissections, however, by other surgeons have demonstrated, and seemingly very satisfactorily, that the part projecting into the bladder, and forming the valve, is not the third lobe, but a more anterior part of the gland. It has also been ascertained, that whenever this valvular projection from the prostate takes place, and aptly denominated by Mr. Charles Bell, *uvula vesicæ*, the muscles of the ureters are enlarged, and will be found inserted at the root of the tumor.

In dysuria there is a frequent inclination to make water, attended with a smarting pain, heat and difficulty in voiding it, together with a sense of fulness in the region of the bladder. The symptoms often vary, however, according to the cause which has given rise to it. If it proceeds from a calculus in the kidney or ureter, besides the affections mentioned, it will be accompanied with nausea, vomiting, and acute pains in the loins and region of the ureter and kidney of the side affected.—When a stone in the bladder or gravel in the urethra is the cause, an acute pain will be felt at the end of the penis, particularly on voiding the last drops of urine, and the stream of water will either be divided into two, or be discharged in a twisted manner, not unlike a cork-screw. If an enlargement or scirrhus or the prostate gland has occasioned the suppression or difficulty of urine, a hard indolent tumor, unattended with any acute pain, may readily be felt in the perinæum, or by introducing the finger in ano.

Dysuria is seldom attended with much danger, unless by neglect it should terminate in a total obstruction. Ischuria may always be regarded as a dangerous complaint when it continues for any length of time,



from the great distension of the bladder, and often consequent inflammation which ensues.

*Treatment.*—When dysuria has arisen in consequence of the application of a blister, as sometimes happens, nothing more will be necessary than to direct the patient to drink plentifully of warm diluent liquors, such as a thin solution of gum acaciæ, linseed-tea, marshmallow decoction, or barley-water. When it proceeds from any other cause and the symptoms are violent, besides the means just mentioned, flannel cloths wrung out in a warm decoction of emollient herbs, or a bladder filled with warm water, should be kept constantly applied over the region of the pubes; and emollient clysters with a considerable portion of lobelia, should be injected frequently, both with the view of acting as an internal fomentation, and of dislodging any indurated faeces that may be collected, and which by their pressure and stimulus will of themselves often produce a strangury, or difficulty of making urine.

In all cases of either dysuria, or ischuria, where relief is at all protracted, we should promptly resort to a full course of medicine, with long steamings and repeated lobelia injections. This course will rarely, if ever, fail to afford the wished-for result.

## AMENORRHŒA, OR INTERRUPTION OF THE MENSTRUAL FLUX.

AMENORRHŒA is to be considered as of two kinds; the one where the menses do not begin to flow about the period of life at which they generally appear; and the other where, after having made their appearance, they cease to return at their usual periods from other causes than conception. The term of retention has been applied to the former, and that of suppression to the latter.

Menstruation seems evidently to give a disposition to the female organs of generation to be acted upon by the male semen so as to fit them for impregnation, as women seldom, if ever, bear children before they have menstruated, and few or none ever become pregnant after the total cessation of this discharge. Whether or not the blood which should have passed off by menstruation contributes to the formation and nutriment of the fœtus in utero, is looked upon as a matter of doubt: that it does not, is the opinion most generally entertained.

An ingenious solution of the problem, Why nature should have doomed the human female to the menstrual discharge? has been offered by Mr. Abernethy. It can only be solved, he remarks, by supposing that it relieves uterine irritation, and mitigates the extreme of sexual desire, thus enabling a woman to conform to the laws of morality, and the social compacts that are established between us.

In warm climates menstruation takes place at a much earlier period of life than in cold ones, as in the former it often makes its appearance

at the age of ten or eleven years; whereas in the latter it is seldom to be observed before fifteen or sixteen. It also ceases much sooner with women who reside in warm climates than it does with those who are inhabitants of cold ones; as in the former, menstruation is not often to be observed after the age of forty; whereas in the latter it seldom stops before that of forty-five and is in many instances extended to fifty years.

Some women begin to menstruate without any previous indisposition; but with most of them the first appearance of the discharge is preceded by a swelling or enlargement of the breasts, together with a sense of fulness at the lower region of the belly, pains in the back and inferior extremities, and some slight hysteric affections, all of which cease as soon as the flow of blood takes place.

For the first two or three times of its appearing it is apt to be somewhat irregular, both as to the quantity of blood which is discharged and the period of its return; but after these it usually observes stated times, and nearly the same quantity is lost at each visitation, unless some irregularity ensues.

To ascertain the quantum generally discharged with exactness is impossible, as this varies in different women, and greatly depends on the constitution. Those of a delicate habit and lax fibre have a more copious and longer continued discharge than women of a robust constitution. In general, however, the menses continue to flow from four to six days, and the quantity of blood discharged is about five ounces.

Pregnant women, and those that suckle children, do not usually menstruate during such processes.

## CHLOROSIS, OR RETENTION OF THE MENSES.

THE cause of this disease seems to be a want of power in the system, arising from weakness, to propel the blood into the uterine vessels with a force sufficient to open their extremities, so as to allow of a discharge of blood from them; but the origin of the weakness which appears at this particular period of life we are wholly unacquainted with. Some have referred it to a certain state or affection of the ovaria, between which and the uterine vessels there is a seeming connexion.

The mere want of the discharge may not produce the disease, for frequently it does not appear until seventeen or nineteen years of age without producing any morbid affection. This is not to be considered as morbid unless the system is evidently deranged thereby. In many cases, however, morbid symptoms do appear, which are evidently connected with the defect of the menses, and go off upon its discharge.

The supposed connexion of chlorosis with defective menstruation as its cause, and with the restraints imposed by the laws of society on certain natural appetites and passions, has been combated by a late writer, and he thinks that the leading symptoms may be readily explained by a

reference to the state of the primæ viæ. Costiveness always precedes and accompanies the other symptoms. This induces, he says, the feculent odor of the breath, disordered stomach, depraved appetite, and impaired digestion, which preclude a sufficient supply of nourishment at a period of growth when it is most wanted.

Heaviness, listlessness to motion, fatigue on the least exercise, palpitations at the heart, pains in the back, loins, and hips, flatulency, and acidities in the stomach and bowels, costiveness, a preternatural appetite for chalk, lime, and various other absorbents, together with many dyspeptic symptoms, usually attend on chlorosis.

As it advances in its progress the face becomes pale, and afterwards assumes a yellowish hue, even verging upon green, from whence it has been called green sickness; the lips lose their rosy color; the eyes are encircled with a livid areola; the whole body has a languid appearance, with every indication of a want of power and energy in the constitution; the feet are affected with œdematous swellings; the breathing is much hurried by any vigorous exertion of the body; the pulse is quick, but small; and the person is apt to be affected with a cough, and with many of the symptoms of hysteria. Sometimes a great quantity of pale urine is discharged in the morning, and not unfrequently hectic fever attends.

To procure a flow of the menses proves in some cases a very difficult matter; and where the disease has been of long standing, various morbid affections of the viscera are often brought on, which at length terminate fatally. By marriage, and a change in the mode of life, the disorder has in several instances been removed.

Dissections of those who have died of chlorosis, have usually shown the ovaria to be in a scirrhus or dropsical state. In some cases, the liver, spleen, and mesenteric glands have likewise been found in a diseased condition.

*Treatment.*—The cure of the disorder is to be regulated on the plan of increasing the tone of the general system, and of exciting the action of the uterine vessels by stimulants.

The first of these is to be effected by a generous nutritive diet, with a moderate use of wine; by gentle and daily exercise, but more particularly on horseback; by associating with agreeable company, so as to keep the attention engaged, and the mind tranquil and amused; by inhaling pure air, and by a regular use of tonic medicines, as woman's friend, and the various vegetable bitters.

Previous to the use of these medicines, it may be advisable to give gentle emetics, or light courses, for the purpose of cleansing the stomach and freeing it from acidities and inactive fluids.

The second intention of cure (viz: of exciting the action of the uterine vessels) is to be promoted by the exercises of walking, dancing, and jumping, by frequent friction, by putting the feet into warm water frequently, and by the vapor bath often applied to the lower part of the body.

In all cases, however, venery is the most certain and natural remedy.

## A SUPPRESSION OF THE MENSES.

ANY interruption occurring after the menstrual flux has once been established in its regular course, except when occasioned by conception, is always to be considered as a case of suppression.

A constriction of the extremities of the vessels of the uterus arising from accidental circumstances, such as cold, anxiety of mind, fear, inactivity of body, the frequent use of acids and other sedatives, &c., is the cause which evidently produces a suppression of the menses. In some few cases it appears as a symptom of other diseases, and particularly of general debility in the system. Herein there is a want of the necessary propelling force or due action of the vessels.

When the menstrual flux has been suppressed for any considerable length of time, it not unfrequently happens that the blood which should have passed off by the uterus, being determined more copiously and forcibly to other parts, gives rise to hæmorrhages; hence it is frequently poured out from the nose, stomach, lungs, and other parts, in such cases. At first, however, febrile or inflammatory symptoms appear, the pulse is hard and frequent, the skin hot, and there is a severe pain in the head, back, and loins. Besides being subject to these occurrences, the patient is likewise much troubled with costiveness, colic pains, and dyspeptic and hysteric symptoms.

Our prognostic in this disease is to be directed by the cause which has given rise to it, the length of time it has continued, and the state of the person's health in other respects. When menstruation is suddenly suppressed, in consequence of cold, it may easily be restored by pursuing proper means; but where the suppression has been of long standing, and leucorrhœa attends, we ought always to consider such circumstances as unfavorable.

In those cases which have terminated fatally in consequence of the long continuance of the disease, the same morbid changes in the ovaria and uterus are to be observed, on dissection, as in those of a retention of the menses.

Every attentive practitioner must know, that if there be cases of suppressed or obstructed menstruation where the fluid is tardily secreted from local or general debility, there are many others in which an opposite state of the woman's frame becomes the cause of such irregularities.—It will, therefore, be highly necessary in the treatment of these complaints, that the morbid peculiarities, and habits of life of the patient, be taken into consideration; let the first be counteracted, the second be improved, let the sanguine have her excess of fulness diminished, let the debilitated have her powers augmented. In short, let the general health be amended, and the functions dependent thereon will, in all probability, be restored.

Luxurious living, coupled with an inactive life, often induces obstructed menstruation, the supply of food being greater than the wear and tear of the system, thereby producing a plethoric and unhealthy state. Here abstemiousness with an increase of exercise is the natural remedy.

The application of cold and other accidental circumstances may also



occasion an interruption of the menstrual discharge, by exciting fever in the system.

*Treatment.*—In all such cases, the patient should be freely supplied with sudorifics, as the composition and the mint teas, and as soon as convenient a course of medicine should be administered.

The vapor bath will be found of salutary importance in the management of this disease; and should be given every night on going to bed. The external application of the bath and local frictions will essentially promote the relaxation of the constricted capillaries of the uterus and other parts implicated. To increase their relaxing powers, injections composed of composition, nervine, and lobelia, should also be given at the same time.

The employment of these means should be used more particularly when nature seems to be making an effort to produce the discharge, which may be known by a sense of fulness in the organs of generation, a weight in the back and loins, and slight spasmodic pains in the uterus.

The stomach and digestive organs must be strengthened by the tonic bitters, such as woman's friend and other aromatics; and which at the same time act conjointly to relieve the embarrassed womb. The bowels should be kept duly open by aperients and injections.

Women subject to, or laboring under a suppression of the menses, should carefully avoid all exposures to wet and cold, particularly in the feet, which parts ought to be kept not only dry but warm.

Practitioners should be aware of the connexion between a suppression of this secretion and pregnancy.

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## DIFFICULT MENSTRUATION.

**BESIDES** the two deviations from the usual course of nature already mentioned, there sometimes occurs a third, viz: where menstruation, although not wholly suppressed, is nevertheless somewhat difficult, and accompanied with severe pains in the back, loins, and bottom of the belly.

This disease is supposed to be owing to a weak action of the vessels of the uterus, or spasm of its extreme vessels, and is to be obviated by vapor bathing both general and topical; lobelia, nervine, and sudorifics in broken doses.

## CESSATION OF THE MENSES.

THE period of life at which menstruation ceases is always a very critical one to women, as the constitution then undergoes a very considerable change; and it not unfrequently happens, that chronic complaints then arise which create much disturbance, and after a time terminate fatally, if not counteracted.

The menses seldom cease all at once, but for some time before their stoppage become somewhat irregular, both as to the periods and the quantity.

When they happen to disappear suddenly in women of a full plethoric habit, such persons should be careful to confine themselves to a more spare diet than usual; they should likewise take regular exercise, and keep their body open by a use of some mild laxative.

When the patient is sensible of a seeming fullness of the vessels, with giddiness and occasional pains in the head, courses of medicine and other appropriate treatment should be immediately resorted to.

If ulcers break out in the legs or any other part of the body on a total cessation of the menses, they ought to be regarded as critical discharges, and should be treated with due caution.

Should scirrhus or cancerous affections take place on a stoppage of the menstrual flux, as sometimes happens, the remediate measures advised under that head must be resorted to.

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ENCYSTED TUMORS.

THESE swellings consist of a cyst, in which is contained a matter very various in its appearance and consistence. Sometimes it is soft, sometimes quite fluid, and in other instances hard, and even ossified. When the matter is fluid like honey, the tumor is named *meliceris*; when of a pappy quality, *atheroma*; when fatty, *steatoma*. These swellings have a soft or hard feel, according to the nature of their contents: but the consistence of the contained matter cannot always be ascertained by the touch, especially when the cyst is very thick.

Sometimes the cyst is very thin, sometimes very thick, but in general, though not always, its thickness is proportioned to its age. It is often quite firm, like parchment or cartilage; and it commonly contains only one cavity; however, this is frequently insected by several partitions.—Steatomatous tumors sometimes consist of several contiguous cysts, which may easily be separated from each other.

Encysted tumors are usually situated immediately under the skin; but occasionally they form in deeper situations. Such swellings, especially steatomatous ones, frequently attain an enormous magnitude. At first they are constantly moveable, and probably would continue so, if all external pressure were kept from influencing them. In time they

become immoveable, that is, they become adherent to the skin and sub-jacent parts.

The most successful treatment for discussing encysted tumors is courses, stimulating liniment, and local frictions.

The best practice, however, is the operation by which the swellings are cut out. The art of doing this with adroitness consists in dissecting the parts surrounding the tumor without wounding the cyst. If the latter accident occur, the contents frequently flow out, the cyst collapses, and the continuance of the dissection is attended with more difficulty. It is a great point to remove every particle of the cyst, and hence it is satisfactory to take it out entire, that is, without wounding it. When any portion remains behind, the wound will frequently not heal, in consequence of fungous granulations arising from the diseased part. Unless the swelling be large, a single incision through the skin is sufficient; but in other instances it is advantageous to make two cuts, in this manner (); first, because it facilitates the removal of the tumor; secondly, because it prevents a redundance of skin, which would take place if none were removed, and would greatly retard the cicatrization of the wound.

After the operation, the edges of the wound are to be brought together with sticking plaster, and a compress and bandage are to be applied.

1. *Common vascular, or organized tumors.*—Under this title are comprehended all tumors, which appear to be composed of the gelatinous part of the blood, rendered more or less vascular, by the growth of vessels through it, without having any distinguishable peculiarity of structure. This kind of organization in tumors is the most simple, and, perhaps, may always precede other descriptions of structure.

Vascular fleshy tumors not only make their appearance as tumors, which are altogether extraneous in regard to the original fabric of the body; they also enlarge natural parts, particularly the testis, mamma, and absorbent glands.

When this sort of swelling has attained a considerable size, the superficial veins become quite varicose. If left to itself the tumor generally grows till the skin is so distended that it ulcerates, and exposes the new-formed substance, which sloughs and falls out.

The disease might be got rid of in this manner; but such are the constitutional irritation attending it, and the fetor and frightful appearance of the part, that the rest of the swelling is generally removed by an operation.

2. *Adipose tumors.*—Fatty tumors are exceedingly common, and are generally surrounded with a very thin capsule, which is only slightly connected to them by means of vessels. Adipose tumors generally grow in a regular, slow, and progressive manner; their vessels are neither large nor numerous. Hence the removal of these swellings is attended with little danger from hæmorrhage, and they are very easily separated from the surrounding parts. When they have been inflamed, however, the detachment is more difficult.

3. *Pancreatic tumors.*—This is the term which Mr. Abernethy applies to such sarcomatous tumors as resemble the pancreas in their internal structure.

The substance of which they consist is composed of irregular-shaped

masses. These are connected together by a fibrous kind of texture.—This species of tumor is sometimes formed distinctly in the cellular substance, but most commonly occurs in the female breast, perhaps originating in the lymphatic glands.

Mr. Abernethy mentions a case in which the lymphatic glands beneath the jaw were affected with pancreatic sarcoma. This sort of tumor increases slowly, and is not prone to inflame and suppurate.

The morbid structure in question frequently takes place in the breast, a little above, and on that side of the nipple which is next to the arm. In general the disease is chronic, and does not involve the absorbent glands in the vicinity. But in a few instances this species of sarcoma, when situated in the breast, deviates from its ordinary indolent nature, and occasions severe and lancinating pain, an inflammatory state of the integuments, and an adhesion of them to the tumor. The axillary glands also enlarge.

Pancreatic sarcoma is sometimes so irritable a disease that Mr. Abernethy thinks it may frequently be considered as a cancer. When the glands in the axilla become affected, one generally swells at first, and is extremely tender and painful; afterwards the pain abates, and it remains indurated; another then becomes affected, and runs through the same course.

Dr. Bouttatz, of Moscow, has published an account of a tumor which resembled the pancreas in its structure, and grew beneath the conjunctiva of the eye.

4. *Cystic tumor*.—This name is applied because the disease contains cysts or cells. Cystic tumor sometimes occurs as a distinct tumor, but is commonly met with in the testis and ovary. The cysts, both in the former and latter part, are capable of being rendered red by anatomical injection. The cavities generally contain a serous fluid, but sometimes a caseous substance. Mr. Abernethy believes that this last sort of case, when the testicle is concerned, is peculiarly intractable.

5. *Mastoid, or mammary tumor*, so named from its resemblance to the mammary gland in structure. Mr. Abernethy has not frequently seen this kind of tumor, and his attention was called to the nature of the disease by a case in which a swelling, partaking of the above structure, and about as large as an orange, was removed from the front of the thigh. The wound seemed at first disposed to heal, but it degenerated afterwards into a malignant ulcer, which occasioned death in the course of two months.

As this kind of tumor is gradually lost in the surrounding parts, which probably retain a disposition to assume a similar morbid alteration, Mr. Abernethy very judiciously recommends a more extensive removal of them than was practiced in the above example.

Mr. Abernethy thinks this kind of tumor more malignant than the preceding species, but not so much so as the following are.

6. *Tuberculated tumor* consists of an aggregation of small, roundish tumors, of various sizes and colors, connected together by a kind of cellular substance.

They are chiefly to be seen in the lymphatic glands of the neck. They



ulcerate, become painful, and are very difficult to cure when of long standing. Fortunately they are not common.

7. *Medullary tumor*.—This form is commonly seen affecting the testis, and has been termed the soft cancer of that part. The tumor resembles the structure and appearance of the medullary substance of the brain.

The inguinal glands on each side become affected with the same morbid change, in consequence of the diseased state of the testis, and acquire a very enormous size. The skin covering the disease in the groin gives way, and the most prominent of the enlarged glands inflame, and are gradually detached in the form of sloughs. Hemorrhage succeeds the separation of each slough, and can only be suppressed by means of continued pressure. After all the dead portions have been thrown off, the skin heals, and continues cicatrized till the distension of another gland renews the foregoing process, and the patient is at length exhausted.

Dissections after death evince, that the glands in the pelvis and abdomen are affected with the same disease.

The facility with which medullary sarcoma is propagated along the absorbent vessels is one of its more striking peculiarities.

*Of the growth of sarcomatous tumors and of chronic inflammation*.—Every kind of fleshy tumor, every enlargement of an original part of the body, can only be the effect of an unnatural action in the vessels.—Whatever matter is deposited in the interstices of a gland, or any other part, must be placed there by those secreting arteries which, in the healthy state, only secrete a sufficient quantity of new particles to supply the old ones removed by the absorbents. Thus the action of the secreting arteries and that of the lymphatics ought to be equal; and whenever more matter is deposited by the blood-vessels than is taken away by the absorbents, a tumor forms in the disordered part. It is possible to conceive, however, that when original parts are enlarged, the morbid change may be owing to an imperfect absorption, and not to any wrong action of the blood-vessels. But in cases of tumors which are quite distinct, and which constituted no original part of the body, the formation of the disease is probably always the result of a morbid state of the surrounding arteries.

The process by which sarcomatous tumors, and indolent indurations, and thickenings, are formed is termed *chronic inflammation*. The blood-vessels, which we must generally suppose to be the active organs in these cases, deposit a superfluous quantity of new matter; and to do so they must assume an increased action, though not of that throbbing sort which happens in cases of acute inflammation.

It is very likely that coagulated lymph is the first kind of matter which is thrown out from the vessels in cases of sarcomatous tumors; that it then becomes vascular itself, and is converted by the action of its own vessels into the various kinds of morbid structure already mentioned.

In proportion as a tumor increases in size, it compresses the surrounding cellular substance, which becomes converted into a kind of membranous capsule surrounding the swelling. In sarcomatous cases the cyst is, in general, thin; and sometimes there is even no cyst whatever.

The growth of indolent tumors does not derange the constitution; they

form in an insidious manner without increased heat, and generally without any uneasiness in the part.

A tumor, when once it has begun to form, becomes itself an additional source of irritation, and a cause of increased action in the vessels. Hence it will continue to enlarge, unless checked by surgical applications, or removed by the knife.

*Treatment of sarcomatous tumors.*—The growth of indolent tumors may frequently be retarded, and sometimes cured, by courses of medicine, the compound syrup of sarsaparilla, and the most stimulating and pungent local applications and discutient poultices. But where these means fail, the removal of the disease by the knife is the best measure, and the sooner this is done the better; for a common adipose tumor, now about the size of an apple and capable of being extirpated with the utmost safety, may in the course of a few years become so large as to weigh near fifteen pounds; and the magnitude of the wound made in cutting out so large a mass would be very perilous. Besides, sarcomatous tumors, when removed in an early state, are not so apt to leave the surface of the wound in a morbid condition.

When the tumor is known, at the time of the operation, to be either a mammary, a tuberculated, or medullary sarcoma, care should be taken to make a free removal of the surrounding substance.

## GANGLIONS.

A **GANGLION** is a small hard tumor, unattended with pain, and composed of a cyst, which is of a firm tendinous texture, and contains a fluid resembling the white of an egg. It is usually moveable (in a greater or less degree) beneath the skin; its growth is slow, and it is seldom much larger than a hazlenut.

Its figure is commonly round, smooth, and even; it seldom inflames, and still more rarely does it suppurate; but when the latter event happens an ill-conditioned ulcer is generally produced.

Ganglions occur most frequently on the hands and fingers, and always over a tendon, with which the sac is connected by a slender neck. These tumors are usually preceded by a bruise or violent sprain; and they move along with the tendon to which they are attached.

Deformity and impediment to the use of some particular muscle are the utmost inconveniences commonly resulting from this disease; but when the tumor ulcerates a very foul and even dangerous ulcer may be the result.

*Treatment.*—The application of the most stimulating liniment, will be found most serviceable with a view of causing them to suppurate. No doubt, when ganglions are only attached to the subjacent parts by a slender pedicle, they might be as safely cut out as encysted tumors, if care were taken to leave no part of the sac behind. The disease, however, is not severe enough to induce the generality of patients to submit to an operation, particularly as the tumors may be always greatly diminished, or even quite dispersed, by the preceding measures.

## WHITE SWELLINGS AND OTHER AFFECTIONS OF THE JOINTS.

### WHITE SWELLINGS.

THE large joints, such as the knee, ankle, wrist, and elbow, are most exposed to the attack of this alarming malady. In the first stages of the disease the skin is not at all altered in color. The swelling sometimes yields in a certain degree to pressure, but is generally sufficiently firm to make the uninformed examiner believe that the bones contribute to the tumor. Whatever degree of pain may attend the early stage of the disorder, it particularly affects only one point of the articulation, in general its centre, or the head of tibia. In most cases the tumor at first is very trivial, although the pain is severe. When the knee is affected a fullness is first observed to occupy the little hollows, which are naturally situated on each side of the patella. This prominence augments, and the whole articulation soon becomes every where very palpably enlarged.

As the patient cannot bear the weight of his body on the affected limb, he gets into the habit of only touching the ground with his toe, and thus the knee is generally kept a little bent, and the power of completely extending it again is soon lost. In advanced cases the knee is always found in a permanent state of flexion.

At length the diseased joint attains an enormous size, but the skin is not materially affected; a shining smoothness and a few varicose veins being the only uncommon appearances. The skin, however, cannot now be pinched up into a fold, as it could in the early stage of the disease.

At last abscesses form around the joint, and their contents are discharged through ulcerated apertures. These openings sometimes heal after a time, and other similar abscesses take place at a different part of the tumor.

The patient's health gradually becomes impaired by the local disease. His appetite fails; he cannot sleep at night; his pulse is small and frequent; he has profuse perspirations; and his bowels are often disordered with diarrhœa. Under such symptoms dissolution follows sooner or later, unless the local disease is relieved.

There is another kind of white swelling, termed *rheumatic*, and it is very different from the *scorfulous* just described.

In the rheumatic the pain is said never to occur without some swelling being evident, nor does the acuteness of the pain subside in proportion as the tumefaction increases. On the other hand, scorfulous white swellings are always preceded with pain, which is not so acute after the swelling commences, as it was before. In rheumatic cases the pain is not confined to a particular point, but extends over the whole articulation, and the health is not so much impaired as in the other instances. Nor do the bones undergo the morbid alteration which is peculiar to scorfulous affections of the joints. Rheumatic cases are more frequently cured than scorfulous ones.

Mr. Cooper says, "it is a very prevailing notion that, in white swell-

ings, the heads of the bones are preternaturally enlarged. I must frankly own that, deceived by the feel of many diseased joints, and influenced by general opinion, I once imbibed the idea that there is oftentimes a regular expansion of the heads of scorfulous bones. But, excepting an occasional enlargement, which arises from spiculæ of osseous matter, deposited on the outside of the tibia, ulna, &c., and which alteration cannot be called an expansion of those bones, I never have been an eye-witness of the head of the bone being of preternaturally large dimensions, in consequence of the disease known by the name of white swelling. I have been in the habit of frequently inspecting the state of the numerous diseased joints which are annually amputated in St. Bartholomew's hospital, and though I have long been attentive to this point, my searches after really enlarged scorfulous bone have always been in vain. The change which the head of the tibia undergoes in many cases is first a partial absorption of the phosphate of lime throughout its texture, while the soft kind of matter seems to be secreted into its substance. In a more advanced stage, and indeed in that stage which most frequently takes place before a joint is amputated, the head of the bone has deep excavations in consequence of caries, and its structure is now so softened, that when an instrument is pushed against the carious part it easily penetrates deeply into the bone."

The soft parts undergo a material change; they are both thickened and softened; and there is a large quantity of a viscid fluid intermixed with the cellular substance. In short the whole texture of the cellular membrane becomes thicker and softer than in the healthy state.

In the cavity of the joint we sometimes find a quantity of curdy matter, and cartilages absorbed in various places.

*Treatment.*—White swellings, whether of that description which has been termed rheumatic, or of that which is denominated scorfulous present themselves in practice in two very different stages: in one there is a degree of acute inflammation about the joint; in the other the affection is entirely chronic.

The courses unremitted, the local baths, fomentations, and correct poultices are particularly indicated, when acute inflammation is present. Composition and broken doses of lobelia should be constantly employed as a sudorific. The local baths should be applied as often as twice a day; and additional advantage will be gained by their being medicated by some astringent herbs.

In the chronic form of this complaint, if it cannot be scattered, it will be a point with the practitioner to establish suppuration as soon as practicable. For this purpose the following compound may be used, which possesses great merit. Take the dregs of No. 6, and thicken with equal parts, of lobelia reds, cohosh (the red is best) and ginger; and to hasten suppuration, the green slips of the blue flagg, or garget may be applied.

As soon as suppuration has been established the compound syrup of sarsaparilla should be advised, courses every third or fourth day, the best tonics; and externally, the appropriate stimulating liniments, and the continued application of the poultices.

Efforts ought to be frequently made to regain the lost use of the joint, by gentle motion and exercise.



The use of the small syringe with a decoction of bayberry, or the chloride of soda, No. 6, or the third preparation, will be found very advantageous, introduced into the sinns and more especially, if the parts appear to be indolent.

*Disease of the hip joint.*—Disease of the hip joint is most commonly met with in children under the age of fourteen; but no age is exempt from the malady, so that though children form a large proportion of those subjects who are afflicted, yet the number of adults and even old persons is also considerable.

The approach of the hip disease is far more insidious than that of a white swelling. The latter is generally preceded by severe pain, while frequently the only forerunner of the former is a slight weakness and limping of the affected limb. As at first there is often no complaint of uneasiness in the hip, while pains affect the knee, it is not uncommon to observe the seat of the disorder mistaken, and applications erroneously made to the latter joint. Even when a fixed pain begins to be felt behind the trochanter, as the joint is not visibly enlarged, the affection is too often disregarded as one of no importance in young subjects, and as a mere rheumatic or gouty complaint in adults. The pain is not confined to the seat of the disease, but shoots downwards in the course to the knee, and along the outer part of the ankle. Many refer their painful sensations to the groin.

Almost as early as the least limping can be perceived, some diminution in the circumference of the leg and thigh has actually taken place. When pressure is made on the front of the hip joint, pain is excited. Another strong pathognomonic symptom is the elongation of the limb in the incipient stage of the hip disease. This change is easily discoverable by comparing the different parts of the diseased limb with the same parts of the sound one.

This elongation of the lower extremity in the present case is a very striking circumstance, and one which has never yet been satisfactorily accounted for.

The natural fullness and convexity of the nates become flattened. The *gluteus magnus* is emiciated, and its edge no longer forms so bold a line as it naturally does at the upper and back part of the thigh, in the sound state of the limb.

Though there may be more pain about the knee than the hip at some periods of the malady, the former joint may always be bent and extended without any increase of uneasiness; but the thigh bone cannot be moved without making the patient experience an increase of suffering.

Patients soon get into the habit of keeping the thigh somewhat bent, and it can seldom afterwards be completely straightened.

Such is the first stage of the disease in its ordinary forms, when the health is commonly little impaired. The second stage of the disease is that which is attended with suppuration.

The symptoms which are the forerunners of the formation of pus are different in different cases. This variety depends on the presence of acute or only chronic inflammation. When the former occurs the parts surrounding the joint become tense and painful; the skin is even reddish, and sympathetic inflammatory fever occurs. As the local pain

abates rigors take place; and a swelling, which very soon points, forms in the vicinity of the joint.

When the abscess is the consequence of that languid kind of inflammation which usually occasions scorfulous collections of matter, there is not so remarkable an increase of pain in the articulation previously to the occurrence of suppuration. Startings and catchings during sleep are said to be among the most certain signs of the formation of matter. When the pus forms in this chronic manner, it does not make its way to the surface so quickly as in cases of active inflammation. A large fluctuating tumor forms, but it does not immediately point.

At last the limb becomes shortened, and this circumstance, when the retraction is considerable, arises from nothing less than an actual dislocation of the head of the thigh bone, in consequence of the destruction of the cartilages, ligaments, and articular cavity. The shortening of the limb sometimes happens before suppuration, for the most part after it. There are instances in which the head of the bone is dislocated, and ankylosis follows without any occurrence of abscesses.

Sometimes before matter forms patients are greatly debilitated by hectic symptoms. In the suppurative stage the effects on the constitution always become worse.

The openings through which the abscesses are discharged continue, in most instances, to emit an unhealthy kind of matter for a long while. The patient either dies of hectic symptoms, or escapes with an ankylosis.

Morbid anatomy evinces that the disease, in its advanced state, produces a destruction of the ligament and cartilages of the joint; the bones composing the hip joint are softened in texture, and have large portions deficient in consequence of absorption. The head of the thigh bone is also frequently affected in the same way, and sometimes dislocated on the dorsum of the ilium, large abscesses occasionally surrounding it.

The remote causes of the hip disease are often undiscoverable. A scorfulous habit, external violence, and lying on the damp ground in summer, undoubtedly frequently contribute to the production of the disease.

*Treatment.*—From the analogy between the white swelling and hip disease, it is easy to perceive that the two cases ought to be treated on similar principles. Every thing said on this subject, in the preceding part of the chapter, is for the most applicable here.

*Of cartilaginous substances in joints.*—These preternatural bodies are either attached to a part of the inside of the joint, or are quite unconnected and loose. They are mostly met with in the knee, though instances are on record of their being found in the articulation of the jaw, ankle, and elbow. It is in the knee that they become objects of surgical attention. While they continue by the side of the patella they cause but little trouble; but when they slip under the ligament of that bone, or between the same bone and the condyles of the femur, or between the latter bone and the head of the tibia, they impede progression, cause considerable pain, and often excite inflammation.

Cartilaginous tumors only continue to enlarge as long as they are connected by a pedicle with some part of the cavity of the joint. They

seldom exceed an almond in size. Mr. Home, however, mentions an instance in which one became nearly as large as the patella.

*Treatment.*—If we except making an incision into the joint, we are not acquainted with any certain means of freeing a patient from the inconvenience of this complaint. To this plan the danger attendant on all wounds of so large an articulation in the knee is a very serious objection. It is a source of much congratulation that the disease is very rare.

*Dropsy of the knee.*—The knee is more subject than other joints to dropsical disease. The affection is very frequently preceded by severe rheumatic affections and local violence. When the fluid is not so copious as to produce very great distention of the capsule, a fluctuation is easily distinguishable. Also, if the limb be extended, so as to relax the ligament of the patella, pressing the collection of fluid causes a rising of that bone, and a fullness on each side of it. The disease is commonly not attended with much pain, but there is a degree of rigidity in the joint.

It is the opinion that some cases of this kind are venereal and others scorfulous. The disease sometimes follows fevers.

*Treatment.*—The only indication is to excite the absorbents to remove the preternatural accumulation of fluid. Local friction and stimulating liniments, it would seem, will answer this purpose.

When the malady occurs during the debility consequent to typhoid and other fevers, the complaint can hardly be expected to get well before the constitution has gained strength.

## SCIRRHUS AND CANCER.

A **SCIRRHUS** is to be considered as the occult or primary stage of cancer, and is not an unfrequent consequence of inflammation when it has attacked or occupied glands. The part becomes of increased size, is knotty, hard, and irregular to the touch, being however unattended with any discoloration of the skin, and acute lancinating pains are every now and then felt darting through the tumor. At length a tendency to cancerous ulceration becomes obvious.

A cancer is an ulcer of the very worst kind, with an uneven surface, and ragged and painful edges, which spreads in a very rapid manner discharges a thin acrimonious matter that excoriates the neighboring integuments, and has a very fetid smell, and which is usually preceded by a hard or scirrhus swelling of the part, if glandular.

The disease is not commonly confined to gland, and particularly the testes and mammae; but is nevertheless now and then to be met with in the uterine, as likewise in the face and other parts that are thinly covered with flesh, and which are at the same time a good deal exposed to external irritation, such as the lower lip, the angles of the eyes, the organs of vision, the wings of the nose, tongue, and penis. From a lodgement of soot in the rugæ of the scrotum, chimney-sweepers who

have arrived at the age of puberty are very subject to a peculiar cancerous affection in this part, and first noticed by the late Mr. Pott.

Cancer is most generally met with in persons advanced in life, and particularly in women about the period when the menses cease. The disease being often met with in unmarried females about this time of life, it has been thought by some that celibacy predisposes to the complaint. Women who have had no children, as likewise those who have had them but not suckled them, are frequently affected with cancer. From several persons of one family having been afflicted with cancer, it seems as if there had been an hereditary predisposition, from some peculiarity or structure, in these instances, to the disease. Climate appears to have some degree of influence in predisposing to cancer: in cold northerly regions the disease is not only more frequent than in the southern latitudes, but seems likewise more intractable in its nature.

It has been observed by many surgeons, that cancerous affections are most prevalent in persons of a scrofulous constitution.

The experiments of Mr. North and others prove the non-existence of specific cancerous matter. Mons. Alibert inoculated himself and some of his pupils with cancerous matter; and although in some instances inflammation of the part and of the lymphatics proceeding from it occurred, yet nothing like scirrhus or cancer succeeded.

A cancer arises most frequently from some external injury, such as a blow; but is now and then to be met with as the consequence of previous inflammation excited by other causes.

Irritation during the scirrhus state of a gland, without any wound or breach of the skin, may be propagated to other glands, and these may take on a similar action with the gland first diseased; but absorption does not take place until the gland becomes ulcerated. When this is the case, the irritation from one gland to another goes on not only more rapidly, but absorption takes place from every part of the diseased surface.

A late writer has offered it as his opinion that cancer is produced by hydatids. That these may be formed on a cancerous gland cannot be disputed, but that they are generally to be met with, or are essential to the disease, cannot be admitted.

Cancer usually begins with a small swelling in the gland unaccompanied by pain or any discoloration. It gradually increases both in size and hardness, in process of time is attended with lancinating pains, as if a sharp-pointed instrument was entering the tumor, and with varicose swellings of the subcutaneous veins, together with an uneasy and painful sensation in the neighboring parts. Sometimes it remains in this indolent and occult or scirrhus state for a length of time, but in other instances it proceeds on to suppuration with great rapidity, and forms an ulcer. Its progress will, however, depend much on the state of the person's constitution, and other like causes. It has been supposed, that in proportion to the rapidity of the progress of any individual case, so is its degree of malignancy.

During the occult state of cancer, the pains recur at very irregular intervals, and are dependent upon causes concerning which nothing satisfactory is known. If the disease is seated in the breast, and the female of such an age that the catamenia have not altogether disappear-



ed, she will usually suffer a considerable exacerbation of pain in the part about the times of their recurrence. The tumor will likewise undergo most likely a proportionally greater augmentation of bulk than during the same space of time at any other period.

When the tumor begins to form adhesions to the surrounding parts, and the disease is in the breast, it is not uncommon to find one or more of the axillary glands on the same side of the body somewhat enlarged.

As this disease approaches near the surface, the integuments which had hitherto retained their natural appearance begin to look puckered, or as if they were drawn together in folds. From this cause, the nipple will be sometimes so retracted and sunk as it were in the surrounding parts, that its existence might be overlooked by a superficial observer.

When the disease has advanced further, the skin becomes inseparably united to the tumor beneath it, and in a little time more it may be observed to have acquired a slight tinge of redness. The other characters of inflammation are also present, though some of them may be in an inconsiderable degree. After a time the whole surface of the swelling puts on a purple shining appearance, and in this state it continues with but little change till ulceration is about to take place. From the exacerbation which usually happens at this period, a degree of febrile irritation will often be excited in the system at large.

The superincumbent parts at length give way to ulceration, and the patient probably experiences a temporary relief from the discharge of a small quantity of sanious or ichorous matter. In general it is not until after some time that the ulceration becomes deep and excavated; for under mild treatment it has been known to continue superficial for some months. Sooner or latter, however, the ulcer assumes the true carcinomatous character. It penetrates deep towards the more central parts, while at its circumference the edges appear hard and elevated. The surrounding skin puts on a livid aspect, and from the surface of the sore there is a considerable discharge of an irritating corrosive quality. Matter of a true purulent appearance is hardly ever furnished by carcinomatous ulcers. The odor of the discharge impresses the organ of smell with a peculiar but indescribable sensation.

If the ulceration be extensive, it will be observed, that while one part of the sore is undergoing a sloughing progress, another will be active in throwing forth luxuriant granulations of a loose and spongy texture. These changes appear sometimes to alternate with each other upon the ulcerated surface, and in their further progression give rise to considerable hæmorrhages from the erosion of the vessels.

From the derangement which is occasioned in the functions of the lungs by the morbid condition of the parts, there gradually comes on difficult breathing, attended by cough and some degree of emaciation, which symptoms are usually followed at no great distance by a fatal termination, and this frequently without any remarkable alteration in the external appearance of the diseased part.

Cancer of the breast is chiefly a disease of middle and advanced life from forty to fifty years is perhaps the most frequent period at which it makes its appearance.

The female organ which is most likely to suffer from cancer, next to

that of the breast, is the uterus, and, like the former, it is a disease of comparatively rare occurrence before the period of life at which the catamenia usually disappear. The early symptoms of this complaint somewhat resemble those of polypus and prolapsus uteri: among them may be enumerated a sense of weakness, with pain or uneasiness in the loins, leucorrhœal discharge, and a sense of bearing down. To these may be added weight and fulness in the region of the pelvis, with acute shooting pains across the cavity, and more or less of derangement in the functions of the digestive viscera. There is also a pain in coitu, and on an examination with the finger, the os uteri is discovered to be partially thickened and indurated, with an increase of size in its aperture. It sometimes happens, however, that the enlargement begins higher up in the cervix uteri, the os uteri remaining closed. In both cases the uterus appears to be situated lower in the vagina than is usual in the healthy unimpregnated state, and when supported upon the finger, a sensible addition to its weight is to be perceived.

After ulceration has taken place there will be a constant discharge of an offensive sanious matter from the vagina. If an examination be again instituted, the os uteri will be found more open, and with ragged irregular edges. Pressure upon these parts will now occasion some degree of pain, and a little blood will commonly be observed to come away upon the finger. About this time the vagina undergoes a considerable deviation from its natural structure; it becomes somewhat hard to the feel, and its rugæ cease to be distinguishable. At the superior part it will frequently be affected with carcinomatous ulceration, communicated from the os uteri by the continuity of surface.

As the different functions of the body become more and more disordered, emaciation increases with rapidity. Frequent retching and vomiting, with torpidity or irregularity of the bowels, arise, mental dejection and despondency ensue, and a sort of hectic fever is constantly present. Towards the latter period of the disease, if the ulceration of the vagina becomes extensive, there will frequently be an enlargement of the absorbent glands in the groin, and this sometimes arrives to such a degree as to occasion swelling of the whole lower extremity. It seldom happens that the hæmorrhage from the ulcerated parts is in so violent a degree as to prove fatal of itself.

The progress of scirrhus of the testicle is usually slower than where the disease occurs in other glandular parts, yet it is capable of being more or less accelerated according to the degree in which the different causes of irritation, whether local or constitutional, are permitted to have influence. The tumor goes on gradually to increase in size, and is attended with nearly the same symptoms and appearances that have been described as appertaining to the cancerous breast. The acute darting pain is at first confined to the precise site of the swelling, but afterwards extends in the direction of the spermatic chord of the abdomen, and even up the spine and in the loins.

In process of time the shape of the gland becomes totally obscured, and nothing remains to be distinguished but the enlargement, which is remarkable on account of its weight, excessive degree of hardness, and its surface being studded more or less with protuberant inequalities.

When the disease begins to extend, it proceeds from the testicle to the epididymis, and thence by the lymphatic vessels of the chord, till it arrives at the lumbar glands. In this course there is produced great thickening and induration of the different parts through which it passes. An irregular or knotted feeling of the spermatic chord is another and very striking effect of the extension of the disease. Some time after the lumbar glands have been contaminated, derangement in the functions of the various neighboring viscera is perceptible, and at this time a prominent tumor may be distinguished through the parietes of the abdomen, consisting of a cluster of these enlarged lymphatic glands. In process of time, cancerous ulceration of the testicle ensues, and in some instances is extended to the scrotum.

Scirrhus of the prostate gland is a disease with which men far advanced in life are very apt to be afflicted, but particularly those who imprudently produce an excitement of the seminal vessels by long toying with women, or by unnatural means, or onanism. The frequency of the disease may be attributed to the unusual degree of irritation which, in the present licentious state of society, is kept up in the organs of generation by Cytherean excesses, and their attendants, strictures and the use of bougies. After a time, sharp lancinating pains are felt darting through the gland now and then, the flow of urine becomes considerably obstructed, and dysuria, and occasionally tenesmus, with ischuria, and other distressing symptoms, arise.

At length ulceration ensues, and the patient sinks gradually under a state of misery and pain, or he is cut off by a total suppression of urine.

The cancer with which chimney-sweepers are sometimes attacked, generally begins in the rugæ of the scrotum, in the form of a wart.—This, from the itching and uneasiness it at first occasions, and from the part being frequently rubbed in the act of climbing and descending the chimneys, is often scratched and otherwise irritated; thus a constant stimulus is applied in addition to the action of the soot on the part. If the head of the wart is picked or rubbed off, another is soon formed; and at length there is not only a horny crust, but a thickened base beneath, proceeding inwards, until a large fungus or a spreading ulceration is produced, which at length occasions the testicle also to become affected.

Cutaneous cancer is most frequently observed to occupy the lower lip, the angles of the eyes, wings of the nose, and penis. At its commencement it usually appears under the form of a small preternatural enlargement or elevation of the skin. Sometimes it is so hard to the touch and in consistence as nearly to approach to the nature of horn, while on other occasions it will bear a much nearer resemblance to a common wart. In a few instances it will put on the appearance of a small discolored pimple.

Under whatever form the disease may first appear, a degree of surrounding hardness will invariably be found to take place. Some degree of shooting pain from time to time is likewise experienced in the part. In many cases ulceration seems to be materially accelerated by the accidental irritation of the patient's fingers, which are often, although unconsciously, applied in the vicinity of the disease. Sometimes, however, a

sort of scale is generated so as to form a covering to the little tumor, and this will be removed and again be renewed several times in succession before ulceration is perfectly established.

When the part has once arrived to a state of ulceration, it quickly puts on those characters of malignity which have occasioned it to be classed as a species of cancer. The surface of the sore possesses, indeed, the common appearance of carcinomatous ulceration, and there is a discharge from it of sanious or other ulcerated matter. In cutaneous ulcer it seldom happens that the lymphatic glands begin to enlarge or grow painful till after the diseased part has been in a state of ulceration for a considerable time, which forms a striking point of difference between this disease and that which has its seat in glandular structures.

In a very great number of cases of cancer of the penis, it has been remarked, that phymosis had naturally existed; hence it has been inferred by some surgeons, that phymosis may generate a predisposition to this affection. A review of the cases published by the authors referred to, and in which amputation of the penis was performed, seems to countenance the opinion that cancer of the penis is an affection purely local, and hence less frequently produced than cancer of other parts.

Cancer of the tongue, like cutaneous cancer, seems to admit of a certain degree of variability in its appearance, which is however, most commonly that of a small hard tumor situated on the upper surface of the tongue, and at no great distance from its anterior extremity. The tumor usually possesses a firm connexion with the subjacent parts, and, before arriving at a state of ulceration, it is not unusual to see it attain a size equal at least to that of a common hazel nut.

Another form under which this disease sometimes shows itself at an early period, is that of a little discolored pimple, having a disposition to bleed very freely from the slightest cause; but there is likewise a third case, where carcinomatous ulceration suddenly breaks out upon the tongue without the part having previously suffered any morbid change of structure, or presented any unnatural appearance sufficient to attract notice.

The pain attendant on the disease in its different stages, though varying in degree, is yet always of that peculiar darting kind which belongs to cancer. When first complained of it is only slight and partial; but gradually increasing in severity as the disorder advances, it will in time extend so as to be felt both about the fauces and base of the skull. The disease may continue a long time even in an ulcerated state without the health appearing to suffer very materially from it. The entire destruction of a great portion of the tongue will sometimes be produced by cancerous ulceration before death takes place in consequence of the disease.

Cancer of the tongue is more frequently met with in those who are pretty far advanced in years than in subjects under the age of puberty.

Scirrhus tumors are often removed with perfect safety, and thereby prevented from degenerating into true cancers, when extirpation is not delayed too long; but after a tumor of this description has ulcerated, thereby assuming the carcinomatous character, and has afforded an opportunity for an absorption into the system, there is every reason to sup-



pose that a complete removal of the tendency can seldom, if ever, be effected; for although we remove the diseased part, still the virus will be likely, sooner or later, to show itself in some other glandular place.

Sir Everard Home has observed, that with respect to the internal structure and appearance of the breast affected with a scirrhus, if a section is made of such a tumor in an early stage, where the structure is seen to advantage, it puts on the following appearances: The centre is the most compact, harder to the feel, has a more uniform texture than the rest of the tumor, and is usually of the consistence of cartilage.— This middle part does not exceed the size of a silver penny, and from this in every direction, like rays, are seen ligamentous bands of a white color, and very narrow, looking in the section like so many irregular lines passing to the circumference of the tumor, which is blended with the surrounding gland. In the interstices between these bands the substance is different, and becomes less compact towards the outer edge. On a more minute examination, transverse ligamentous bands of a fainter appearance form a kind of net-work, in the masses of which the new-formed substance is enclosed.

In a further advanced stage of the tumor, the whole of the diseased parts have a more uniform structure: no central point can be distinguished, the external edge is more defined and distinct from the surrounding gland, and the ligamentous bands in different directions are very apparent, but do not follow any course that can be traced.

No regular distinction of structure can be made in parts affected with carcinomatous ulceration. In the centre, however, is a small irregular cavity filled with a bloody fluid, the edges of which are ulcerated, jagged, and spongy.

*Treatment.*—When any gland has become enlarged, indurated, and shows a tendency to scirrhus, we should, from the earliest period, use our utmost endeavors to discuss it if possible, or at least to prevent its further increase. Applications of a discutient and sedative nature should be had recourse to without delay; pressure of any kind should be guarded against, particularly from the stays, if the breast is the part affected; the bowels must be kept free and open by gentle purgatives administered from time to time, and a proper regimen be enjoined, cautioning the patient to abstain from all vinous and spirituous liquors.

Frequent courses and the compound syrup of sarsaparilla should be given to alter and amend the condition of the fluids. As a local remedy, Thomson's cancer balsam conjoined with oxalic acid, possesses much merit. (It will be remembered the oxalic acid is prepared from the sorrel.) It may be compounded in the proportion of eight parts of the former to one of the latter, spread upon thin leather, and applied alternately with common healing salve. The parts should be washed as often as the cancer is dressed, with warm milk and water, or what is still better, the chloride of soda.

Another vegetable has obtained considerable celebrity for the removal of cancerous affections; but how far subsequent trials will sustain its reputation remains to be tested.

It grows in every part of the United States, and in different sections is known by different names: such as, garget, poke, scoke, scokum, &c.

That it is a very powerful escharotic cannot be doubted; the green root smashed and mixed with a poultice will produce suppuration upon a healthy surface. For the purpose in question an extract is preferable, which may be made of any part, either the root or top. Dr. E. Sperry, of New-London, Ct., cured a very formidable cancer of long standing upon the breast of a woman, by the simple application of the root when dried and pulverised; and that too, after eleven very eminent *savers-of-life*, "in council grave," had said, "she would certainly die!" In other hands it has proved an uncertain remedy.

Mr. Thomas Tyrell, of Missouri, advertises that a cancer upon his nose, which had been treated without success by Professor N. Smith, of New Haven, and the ablest surgeon in the Western country, had been cured in the following manner: He was recommended to use a strong potash, made of the ashes of red oak bark, boiled down to the consistence of molasses, to cover the cancer with it, and in about an hour afterwards to cover with a plaster of tar, which must be removed after a few days, and if any protuberances remain in the wound, apply more potash to them and the plaster again, until they shall disappear; after which, heal the wound with common salve. Cautery and the knife had been previously used in vain. This treatment effected a perfect and speedy cure.

Jonathan Johnson, Esq., of this town, was radically cured of a very formidable cancer upon the face, by the above remedy, in the months of August and September, 1840. Mr. John Luckey, and Stephen Proctor, and another gentlenman, all of this county, have also been permanently cured within the last 16 months, by the application of the same caustic.

The last named gentleman had been afflicted with the malady fifteen years.

Where no advantage seems to be derived from any of the means which have been advised, but on the contrary, the tumor or cancerous affection seems to be steadily progressing, the only hope of relief which can claim our attention, is the complete removal of the diseased part with the knife. When this last resort is adopted, great care should be used that every part of the surrounding integuments which has in the least participated in the malady be cut away, to secure, if possible, the patient against a recurrence of the disease.

## FUNGUS HÆMATODES, OR MEDULLARY SARCOMA.

A DISEASE has of late attracted the attention of some surgeons, and has been pretty generally classed and treated as a cancerous affection in whatever parts of the body it may have been known to occur; but although in its history it has some analogy to cancer, still its symptoms and appearances on dissection are so different from those of cancer, that it cannot with propriety be considered as a disease arising from the same morbid alteration of structure. By some writers it has been named the fungus hæmatodes; by others, the medullary sarcoma; and others again have given it the appellation of spongoid inflammation. Mr. Burns, who has adopted the latter name, mentions it as appearing only in the superior and inferior extremities; but this probably from his not having met with any other cases of it; whereas the other writers describe it as occurring likewise in the ball of the eye, testicle, liver, lungs, uterus, female breasts, and other parts.

A great difference of opinion seems to exist between the English and French pathologists respecting the precise application of fungus hæmatodes.

The progress of fungus hæmatodes, as well as of cancer, is generally slow. When ulceration has taken place, neither of them discharge a purulent matter, but a thin fetid ichor, and occasionally they bleed profusely. They both sometimes assume a fungous appearance, and during their progress contaminate the absorbent glands which are in the course of circulation: they are also equally destructive, communicating the disease to the neighboring parts, whatever the nature of these may be, whether cellular membrane, skin, muscle, periosteum, or bone.

Fungus hæmatodes is generally a disease of early life, whereas cancer is usually confined to those who are advanced in years. Cancer, moreover, seems to be confined to a very few organs of the body, and to a few textures, whereas fungus hæmatodes has been detected in parts where no true scirrhous structure has been ever met with.

On dissection, fungus hæmatodes presents a very different series of phenomena from the scirrhous tumor. When it appears on the external parts of the body, and has not yet acquired a considerable bulk, instead of being hard and unyielding, it is soft and elastic, and has a tolerably equal surface. Its form, when removed from the body, is accurately circumscribed, having generally a distinct covering of condensed cellular membrane. In place of the hard, fibrous-looking substance (the principal component part of scirrhous tumors) the morbid growth in fungus hæmatodes consists of a soft pulpy matter, which mixes readily with water, and is somewhat hardened by acids, and by being boiled in water. It has been compared to medullary matter in consistence and color.—When the skin or covering of fungus hæmatodes has been eroded in the progress of the disease, instead of the morbid growth being destroyed by ulceration, a fungus arises from it, and the tumor seems to increase more rapidly in bulk. If the fungus hæmatodes is not interrupted in its progress, both the original tumor, and the fungous mass growing from it, attain a considerable size, and the fungus, which is of a dark-red or purple-colored mass, of an irregular shape and of a soft texture, is

easily torn, and bleeds profusely when slightly pressed or otherwise injured.

A want of success has generally attended all efforts in the cure of fungus hæmatodes, in whatever part of the body the disease has existed. See treatment of cancer.

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## OF BRONCHOCELE.

THIS disease is marked by a tumor on the fore part of the neck, and seated between the trachea and skin. In general it has been supposed to occupy the thyroid gland.

It is a very common disorder in Derbyshire, but its occurrence is by no means frequent in other parts of Great Britain or in Ireland. Among the inhabitants of the Alps, and other mountainous countries bordering thereon, the Valois, Valteline, at Lucerne, Berne, Fribourgh, in some parts of Piedmont, in the valleys of Savoy and at Milan, it is a disease which is very often met with, and is there known by the name of goitre. It is also frequent in the northern counties of Ohio and Pennsylvania.—The cause which gives rise to it is by no means certain, but by some writers it has been attributed to a use of snow water.

From its having been observed that the inhabitants of districts abounding with saline and mineral springs are more frequently affected with diseases of this sort than persons living in other situations, it has been supposed that the waters descending from these mountains, with which the dissolved snow mixes itself, may also be impregnated with some saline or mineral ingredients capable of producing this singular affection in the throat.

Dr. Saunders observes, that snow water has long lain under the imputation of occasioning those strumous swellings in the neck which deform the inhabitants of many of the Alpine valleys; but that this opinion is not supported by any well-authenticated indisputable facts, and is rendered still more improbable, if not entirely overturned, by the frequency of the disease in Sumatra, where ice and snow are never seen; and its being quite unknown at Chili and in Thibet, though the rivers in these countries are chiefly supplied by the melting of the snow with which the mountains are always covered. Certain experiments have moreover proved that the water of dissolved snow is perhaps the purest of any that can be procured.

A modern writer, in his History of Java, mentions, that there, as well as in Sumatra, there are certain mountainous districts in which the people are subject to those large wens in the throat, termed in Europe goitres; and the cause assigned by the natives is the quality of the water, but that there seems good ground for concluding that it is rather to be attributed to the atmosphere. In proof of this he tells us, that there is a village near the foot of the Teng'gar mountains in the eastern part of the island, where every family is afflicted by this malady, while in another village situated at a greater elevation, and through which the stream



descends which serves for the use of both, there exists no such deformity. He also mentions, that these wens are considered as hereditary in some families, and thus seem independent of situation.

The disease in question is evidently of too local a nature to be attributed solely to an habitual use of snow water, nor can it be brought on by using water impregnated with calcareous earth, as some have imagined; for the same effects are not uniformly produced where such water is used. A predisposition to bronchocele is often entailed by parents upon their children, as well as that glandular affection known by the name of scrofula; which fact is corroborated by the strongest evidence. Where we meet with the disease in particular districts, may we not therefore with good reason attribute its frequency of occurrence rather to the inhabitants of those regions being somewhat secluded from the rest of mankind, and intermarrying among each other, thereby entailing the predisposition to it on their offspring, than to any peculiarity in the articles used for diet?—See Cretinism.

In those situations in the vicinity of mountains where the disease is found to be endemial, it has been attributed by some to a peculiarity in the air, and it has indeed been found more geneally prevalent among the lower class of people and those who are most exposed to the unguarded influence of the weather, and various changes that take place in the air of such situations.

The swelling in bronchocele is at first without pain or any evident fluctuation, and the skin retains its natural appearance; but as the tumor increases in size it grows hard and irregular, the skin acquires a yellow color, and the veins of the neck become varicose; the face is subject to flushings, and the patient complains of frequent headaches, and likewise of pains darting through the body of the tumor.

When the disease is of long standing, and the swelling considerable, we shall find it in general a very difficult matter to effect a cure by medicine or any external application; and it might be unsafe to attempt its removal with the knife on account of the enlarged state of its arteries and its vicinity to the carotids; but in an early stage of the disease we may often be able, by the aid of medicine, to effect a cure, particularly if assisted by the aid of No. 6, or 3d preparation, and frequent frictions over the tumor.

Bronchocele has by some practitioners been supposed to be a dropsical affection of the thyroid gland; and it is true that a great number of capsules filled with water have in one or two instances been found in it on dissection, but in general no such appearances are to be observed. In two cases examined by Mr. Benjamin Bell, this gland was evidently much diminished in size from the compression of the tumor, which was chiefly composed of condensed cellular substances, with effusions of a viscid brown matter in different parts of it.

*Treatment.*—To cure bronchocele we ought at the same time that we give appropriate medicines internally, to employ local remedies, but particularly friction with the hand for at least half an hour three times a day, the efficacy of which may probably be assisted by the joint use of such applications as mentioned above, to excite the action of the absorbent system.

Full and repeated courses of medicine, the compound syrup of sarsaparilla, and the most discutient local remedies must constitute our reliance as the remediate measures in this disease; and they should be persevered in a good length of time.

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## GUINEA-WORM.

THIS disease consists in a small round worm, very much resembling the string of a violin, and of a white color all over, except the head, which is black, that is discovered in different parts of the body, immediately between the muscles and cellular membrane. The arms, legs, and thighs, are, however, the most general seats of it, in which parts it is often found of the length of one or two feet.

It is a disease chiefly to be met with among negroes that are brought from the coast of Africa, or sailors who are lately returned from thence, and has generally been supposed to arise from drinking or bathing in the waters of stagnant ponds or wells, where the animalcules or embryo worms are deposited. It is said also to be a common complaint at Bombay, and all over that part of the coast of India, particularly during the rainy season.

Sir James M'Gregor reports, in his Medical Sketches, that this malady prevailed very much on the voyage from India to Egypt, both among the troops and seamen; and it was only by separating the sick from the healthy, and by a very strict attention to cleanliness, ventilation, and fumigation, that he was able to arrest its progress. He by no means, however, attributes its appearance to the waters which was drunk.

It is obvious, therefore, that the embryos of the worm must have punctured through the skin, and lodged in it among the men previous to their embarkation.

The most probable way, indeed, of accounting for the rise and production of these worms, is by supposing, that in a minute or embryo state (similar to what happens with the chigre) they penetrate the skin of persons who go exposed without any covering, than perhaps a hat, shirt, or trousers; as those who are properly clad, and wear stockings and gaiters, or boots, are never attacked: hence common seamen are liable to them, whilst officers seldom or never suffer from them. This clearly establishes the origin of the affection.

Intestinal worms possibly may be produced by an internal use of certain waters, or mucilaginous vegetables, but that those in question can arise from such a cause cannot readily be admitted; for after being received into the stomach by drinking the water in which they are contained, they must become mixed with the chyle, enter the blood in a living state, and finally be deposited in the cellular membrane and interstices of the muscles to be afterwards hatched, and produce the living animal. Several persons being exposed to their influence may become

diseased, and induce us to suppose that the complaint is of an infectious nature, but which certainly is not the case.

The patient is usually sensible of an itching in the part or parts at first; and on a narrow inspection a small bladder or blister may often be observed. The Guinea-worm does not produce, however, any acute pain, until it is near a state of maturity; at which period the part in which it is lodged becomes swelled, inflamed, and very painful to the touch, and bears a strong resemblance to a boil which is not much disposed to suppurate. The tumor, after having remained in an indolent state for a considerable length of time, breaks at last, and then the head of the worm may be perceived protruded from the orifice which, continuing to push a little forward every day, may at last be laid hold of with ease.

No injurious consequences attend on the disease when properly treated, although when the inflammation is very considerable, there is often much fever present; but by breaking the worm, from being in too great a hurry to extract it, large abscesses and ill-conditioned ulcers are sometimes formed. In a few instances mortification has ensued, and very large sloughs have been cast off; alarming hæmorrhages have also occurred. Frequently after extracting one worm from a patient, a second, or a third, or even a fourth will appear; and after getting one out of the leg, another may be observed in one or both hands, or in the other leg.

While the tumor remains in a hard indolent state, it will be necessary to keep an emollient poultice constantly applied to it, in order to bring it to a speedy and proper suppuration. When it breaks, and the head of the worm protrudes so far as that it can be laid hold of with ease, a piece of cotton rolled up like a quill is then to be tied to it, and as it advances it is to be daily twisted gently round, until the whole is extracted, using at the same time the greatest precaution that it may not be broken. The wound is then to be covered with dry lint, over which is to be laid a pledget of tow, spread with the common salve.

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## HEADACHE.

**THIS** affection is, in some instances, general, over the whole of the head; at other times it is confined to a particular side; and now and then cases occur where the pain occupies so small a part, that it may readily be covered with the end of the finger, which has been called *clavis hystericus*.

The causes which give rise to the headache are most usually indigestion, foulness of the stomach, the hinderance of a free circulation of blood through the head, long exposure to the sun, translations of gouty and rheumatic matter from other parts of the body, the stoppage of some long-accustomed evacuation, inebriety, and lastly, too great a determination of blood to the head. Headache is, however, more frequently a symptomatic affection than a primary one, and often arises in conse-

quence of a fever, or of hypochondriasis, hysteria, or some other nervous disease.

The symptoms which attend on a pain in the head usually vary according to the cause which has produced the complaint.

Where a headache is symptomatic of some other disease, it will be likely to cease on a removal thereof, as in the case of fever. Where the pain comes on suddenly, is acute, and attended with a noise in the ears, giddiness, and a loss of speech, it denotes an attack of apoplexy or palsy. When it arises in hypochondrical or hysterical persons, is very acute, and accompanied with much throbbing of the temporal arteries, it is apt to terminate in madness. A headache proceeding from some fixed nervous affection, is difficult to be removed entirely, and the patient is liable to frequent returns of it.

Between the head and stomach there is a great sympathy; wherefore it happens, that where there is a foulness in the stomach, the head is frequently affected with pain. Where such a cause is apprehended to exist, it will by all means be advisable to give a gentle emetic; and if any costiveness prevails, this should be removed by some proper laxative.

To alleviate the pain at the time, linen cloths wetted in vinegar and water, or in camphorated spirits, may be applied to the forehead and temples, and warm applications to the feet.

From causes disconnected with any constitutional or seated complaint, headaches will usually disappear by the means already noticed; but in headaches dependent on the existence of other diseases, the reader is referred to the treatment of those diseases for their removal.

## ONDONTALGIA, OR TOOTHACHE.

THE toothache consists in an acute pain in one or more of the teeth; but most generally it originates in one, and from that is diffused to the adjacent parts.

A caries of the tooth itself, acted upon by different irritating causes, such as the application of cold, or some acrid matter, is the most usual cause of this complaint; but in some cases it would seem to proceed from a rheumatic affection of the muscles and membranes of the jaw; and here the whole side of the face will be affected. When it takes place in pregnancy, it is to be considered as arising either from an increased irritability or from sympathy.

It may be presumed, that the acrid matter which occasions the toothache is produced by some vice that originates in the tooth itself. In some instances, the caries appears first upon the external surface or enamel of the tooth, in one or more spots which are superficial; but in others it commences in the internal surface, or bony part; the former is, however, by far the most frequent. The caries, by spreading and corroding deeper, at length penetrates the substance of the tooth; and the



external air, and other matters, getting into the cavity, stimulate the nerve, and thereby excite the toothache.

*Treatment.*—The most effectual cure for this disease is extraction of the carious tooth: but as this in some cases may not be advisable, and in others might be strongly objected to by the patient, it will often be necessary to substitute palliative means.

To relieve the urgency of pain in those cases where there is an opening made into the substance of the tooth by the caries, it is usual to introduce cotton impregnated with substances of a caustic nature, such as the essential oil of cloves, cajeput, nutmeg, &c. In some instances the actual cautery has been employed to destroy the sensibility of the nerve.

To prevent a return of the pain when it has ceased, the hole in the tooth should be widened within by a proper instrument, and then be stopped with leaf gold, or leaf lead, by which operation it may often be preserved for many years without any further inconvenience to the person.

But in no instance should the patient ever allow different metals to be put in the same tooth; which is too apt to be the case, especially by itinerant dentists. The acidity of the saliva frequently creates a slight galvanic action, which has a very fatal tendency to the destruction of the tooth; and is described by patients as a *twinge*, not uniform or constant, but dependent altogether on incidental circumstances, such as a degree of acidity of the saliva, &c.

These are the remedies and means to be made use of when the disease is confined to a single tooth; but when the neighboring parts become likewise affected, or there is no access for such an application to the nerve, in consequence of the tooth having no cavity in it, other measures are to be adopted.

Small portions of lint may be saturated in No. 6, and applied to the cavity of the tooth, and is doubtless a better direct local remedy than any of the essential oils; or, if the side of the face is generally swollen and painful, pepper fomentations or poultices will be found very serviceable.

Washing the teeth every morning with a soft brush dipped in clear cold water, or with any of the preparations here appended, will have a beneficial tendency in preserving the teeth healthy.

*Recipe first.* A tincture of bayberry, myrrh, and golden-seal, diluted and used with a soft brush.

*Second.* Equal parts of the tincture of myrrh, tincture of cinchona (peruvian bark) and the chloride of soda. It should be diluted with eight or ten parts of water when used.

The essence of sassafras will be found to possess an agreeable flavor as well as add some merit to all liquid preparations for the teeth and mouth.

*Third.* Equal parts of pulverised charcoal and cinchona bark—used with a brush and cold water.

Tinctures composed of mineral acids diluted, and concealed under various artifices and gritty substances, tinged of divers colors, are vended in the shops under pompous names, as dentrifices; but although they

give a whiteness to the teeth, they nevertheless prove highly pernicious to the enamel, and ought therefore to be used with great caution.

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## TIC DOULOUREX—NEURALGIA, OR PAINFUL AFFECTION OF THE NERVES OF THE FACE.

THIS is one of the most painful chronic complaints to which the human frame is subject; and although of rare occurrence, still practitioners have now and then the misfortune to meet with it, and to deplore the severe sufferings of the patient, and, in some cases, the inefficiency of any aid from medicine. It is the trismus dolorificus of Sauvage, or tic douloureux, by which name it is vulgarly known; but as the one which has been applied to it by a late writer. The term neuralgia facialis has been employed by a French nosologist of the present day, which indeed indicates with accuracy and precision the leading characters of the disease, and is at the same time consistent with a correct and philosophic nomenclature. A late writer, in his Thesis, has nearly adopted the same appellation.

Dr. Fothergill seems to have been the first author who noticed the disease; since which we have been furnished with some remarks on it by Dr. Haighton, in a paper inserted in the Medical Records and Researches: as likewise by Darwin in his Zoonomia. By some it has been supposed to be owing to a cancerous acrimony, but we may with greater reason attribute it to a diseased state of the nerves of the face or their covering. Its true cause has not however been satisfactorily ascertained, but it is generally supposed that the several ramifications of the second branch of the fifth pair of nerves are the parts chiefly affected by it.—Rheumatic and gouty irritation may sometimes be the real source of neuralgic affections.

The most frequent seat of the affection is the nerves over the cheekbone, just below the orbit; the alæ of the nose, upper lip, teeth, and gums. When this is the case, it will be found to proceed from the second branch of the fifth pair of nerves, the superior maxillary nerve, which passes through the foramen rotundum, and whose branches are chiefly distributed to those parts. Sometimes the forehead and temple and inner canthus of the eye, and even the globe of the eye itself, are first affected, from the first branch of the fifth pair, the ophthalmic branch being the subject of the disease; and as there are some cases recorded in which the patient suffered much from an effusion of tears, it might probably arise from that branch of the ephthalmic which goes to the lachrymal gland being the seat of the disorder. When the lower jaw and tongue are affected in addition to the parts already named, the third branch of the fifth pair, or lower maxillary nerve, is diseased. Perhaps as frequently as any of these nerves is the portio dura of the seventh pair diseased; it gives off branches to most parts of the face, and they

communicate with several of those of the fifth pair. The distinguishing mark of its being affected is, that besides the parts already enumerated, we find pain in the ear, the mastoid process, and the angle of the lower jaw. The disease is then chiefly confined to the fifth pair of nerves, of which most frequently the second branch only is affected, and the branches of the portio dura of the seventh pair. From the intimate connexion, however, of most of the branches of these nerves with each other, the disease seldom continues long without extending its ravages; and, in very inveterate cases, all the nerves may possibly be affected.—Neuralgic pains are not however confined to different parts of the head, but have been met with in other portions of the body, such as the breast, side, and calf of the leg.

The only diseases with which tic douloureux can be confounded are rheumatism, hemicrania, and toothache. It is to be distinguished from the first of these by a paroxysm being excited by the slightest touch, by the shortness of its duration, and the extreme violence of the pain.—Neither are the symptoms similar; for in rheumatism, if acute, there is fever with redness and increased heat in the affected part, and generally some degree of swelling; if chronic, the pain is obtuse, long continued, and often increased at night; whereas none of these symptoms usually occur in the tic douloureux.

From hemicrania it may clearly be distinguished, by the circumstance of the pain in tic douloureux accurately following the ramifications of the affected nerve; and

It may be known from the toothache by the shortness of the paroxysm and the rapidity of its succession, and during the interval an entire freedom from all pain; the seat of the pain, and its darting in several directions, according to the particular nerve affected, with an acuteness and poignancy differing from that of the toothache, which seems to strike deep,—while the pain of the tic douloureux is always more superficial and infinitely more lancinating; and, lastly, the convulsive twitchings, which, though not always present, are very frequent, and are never experienced in odontalgia.

Neuralgia faciei spasmodica commonly arises in persons of a delicate irritable habit, at that period of their lives when the bodily strength begins to give way,—for the most part between the fortieth and fiftieth year, but it has occurred at all ages, and in the strong as well as the debilitated, and is excited into action by exposure to a cold and humid atmosphere, by great fatigue, by external violence, and by uneasiness of mind.

*Treatment.*—Full and powerful courses of medicine, repeated to suit the urgency of the case, with the appropriate sudorifics, will very rarely fail to establish permanent relief; about which, in some cases, the regulars so deplore the inefficiency of any aid from medicine.

## GASTRODYNIA, OR PAIN IN THE STOMACH.

THIS disease often occurs in those who are afflicted with despeptic symptoms, such as heartburn, eructations, flatulency, &c.

In addition to what has been mentioned of these complaints under the head of Dyspepsia, it may be proper to notice that cardialgia and gastrodynia originate from an inactivity of the stomach, whence the aliment, instead of being concocted by digestion, and converted into chyle, runs into fermentation, producing acetous acid. Sometimes the gastric juice itself becomes so acid as to give pain to the upper orifice of the stomach; and it is probable that violent cardialgia is more frequently owing to an increase of the acidity of the gastric juice than to the acetous acid produced by fermenting aliment.

*Treatment.*—Temporary relief may be obtained by the use of antacids, as saleratus, magnesia, quick lie, sub-carbonate of soda, chalk, &c.; to which may be added No. 6 and composition. But permanent relief should be our first endeavor, and it may be secured by a few regular courses and the aromatic bitters.

## SPRAINS.

ACCIDENTS of this nature happen most frequently in the wrists, knees, and ankles; and are usually occasioned by a slip, or some sudden effort or violent exertion.

Sprains of the tendons and ligaments are usually productive of an immediate painful and inflammatory swelling. In severe sprains there is often not only an increased action of the arteries in the inflamed part, but there is likewise an instantaneous effusion from the rupture of some of the small vessels. In general, we may suppose the effusion to be of the serous kind, as the skin is not altered in color for some time after the accident: but it sometimes happens that the tumid parts are either of a deep red or leaden color from the very first, owing to blood being extravasated from the ruptured vessels.

In the treatment of sprains, two circumstances are principally to be attended to: the first, to prevent, by all possible means, the swelling from arriving at any considerable magnitude; the second, to employ those remedies which are known to be powerful in removing inflammation.

To answer the first of these intentions, restraining applications, such as vinegar, ardent spirits, and the lees of No. 6 and third preparation, may be made use of.

The local bath, fomentations and astringent poultices, may be applied to advantage.

Where chronic weakness remains in consequence of a sprain, the cold shower bath every morning, and wearing a flannel roller around the part, will be the best course to pursue.



## LITHIASIS, OR THE GRAVEL AND STONE.

THESE diseases depend upon a peculiar disposition of the fluids, and more particularly the secretion of the kidneys, to form a calculous matter; and have been supposed to be owing to the presence of an acid principle in them, termed the uric acid, which seems confirmed by the benefit derived from a course of alkaline medicines. Uric acid is indeed one of the essential elements of the urine of a person in perfect health, and not an accidental or diseased production of the animal economy: in the healthy state it is wholly dissolved in the urine; and in gravel, a portion of it is deposited in the form of sand or calculi in the cavities destined to collect and evacuate the fluid secreted by the kidneys. A long use of fermented liquors, and of wines abounding with tartar, may possibly in some constitutions prove occasioned causes of the gravel and stone.

It has also been long supposed that water impregnated with sulphate and carbonate of lime, constituting what is called hard water, predisposes persons to be afflicted with the gravel and stone; but Dr. Henry, in his excellent Thesis, looks upon this opinion as an unfounded prejudice. Instances have been adduced where a stone has arisen from the accidental introduction and some substance in the bladder, thereby forming a nucleus. That a morbidly increased secretion of gravelly matter frequently occurs independent of external causes, we have the most satisfactory proof in the hereditary disposition of many families to this complaint. An excess of uric acid is generally supposed to be the proximate cause of the formation of sand and calculi, and this excess will much depend on the mode of life and kind of diet adopted by the patient. All substances containing azote furnish matter for the formation of uric acid into which it is readily transformed, and tends to the production of gravel. The use of animal food and other analogous aliments tends to diminish the quantity of urine at the same time that it increases the proportion of uric acid, whereas the vegetable diet has the contrary effect.

Those who are in the decline of life, and who have been much engaged in sedentary employments, as likewise those who are much afflicted with the gout, are in general very subject to nephritic complaints; but it is a matter of notoriety that the period of life from infancy to about fifteen years, is most subject to the formation of calculi in the bladder; and that the children of the poor are afflicted in a greater proportion than those of the opulent. From the difference in the structure of the urinary passages in the sexes, men are more liable to them than women. In warm climates we seldom meet with instances of calculous concretions forming of any size either in the kidneys or bladder, as the particles of sand deposited from the urine usually pass off before they can adhere together, owing to the relaxed state of the parts; but in cold ones they are found frequently of considerable magnitude.

Excess of urea is not unfrequently met with, especially in children and persons depositing the phosphates. In these cases, the urine is generally pale, but sometimes high-colored, like porter and water mixed. When recently voided, it reddens litmus paper, and is for the

most part free from sediment. Nitric acid produces speedy crystallization, and when an abundance of urea is discovered there is reason to suppose that in some instances an excess of urea has been confounded with diabetes insipidus, though differing greatly from that disease.

Where urea is in excess, there is usually a frequent and almost irresistible desire of voiding the urine, but this does not arise from a fulness of the bladder : for in general, only a small quantity is voided at one time, but from the frequency, the total quantity voided in a given time not being greater than natural. In cold weather the quantity is augmented, and it is also increased by all causes producing mental agitation. There is often a sense of weight, or dull pain in the back, and an occasional irritation about the neck of the bladder, which now and then extends along the urethra. The pulse, however, is not affected, and the tongue is clean : there is no remarkable thirst, nor are the functions of the stomach and bowels much deranged.

A fit of the gravel is attended with a fixed pain in the loins, numbness of the thigh on the side affected, nausea and vomiting, and not unfrequently with a slight suppression of urine. As the irritating matter removes from the kidney down into the ureter, it sometimes produces such acute pain as to occasion faintings and convulsive fits. The symptoms often resemble those of nephritis ; but the deposition of reddish-brown sand, or very fine powder of the same color, in the urine on becoming cold, will demonstrate the difference.

When gravel has once formed in the pelvis of the kidney or elsewhere, it continues to increase by receiving on its surface new layers of uric acid successively precipitated ; of which we may be convinced by cutting the concretions transversely, which enables us to perceive that they are almost entirely composed of concentric layers.

One of the principal diagnostic symptoms of calculus in the kidney is the dark appearance of the urine, as if it were mixed with coffee grounds, evidently depending on broken down particles of blood, proceeding from the obscure but continued irritation of the kidney. When this occurs in conjunction with a dull heavy pain in the loins, there can be very little doubt of the presence of calculus in the kidney. In mere inflammation of this organ, when no calculi is present, the urine does not put on the above appearance.

Discovered affections of the prostate gland are those which, without proper attention, are most likely to be confounded with stone in the bladder. One mark of distinction which the young practitioner will do well to attend to is, that in the prostate affection, the pain experienced in making water will be always in the commencement of micturition, while on the contrary, it is most usually during the passage of the urine, or when the bladder is nearly emptied, that pains and obstructions are perceived in cases of calculus. Another important diagnostic of stone is, that the irritation which it induces does not so much affect the general health as the same degree of local disturbance from other causes.

The symptoms which attend on a stone in the bladder are, a frequent inclination to make water, which flows in a small quantity, is often suddenly interrupted, and is voided towards the end with pain in the glans penis. The patient, moreover, cannot bear any kind of rough motion ;

neither can he make use of any severe exercise without enduring great torture, and perhaps bringing on either a discharge of bloody urine, or some degree of temporary suppression. With these symptoms he experiences pain in the neck of the bladder, tenesmus, itching and uneasiness in the anus, frequent nausea, and sometimes a numbness of one or both thighs, with a retraction of one of the testes.

The long-continued irritation of the coats of the bladder by the stone, produces a considerable thickening in their substance, but principally in the muscular coat, the packets of its fibres becoming large and in capable of that dilatation which they formerly possessed: their irritability, however, increases, so that they are excited to contract upon a few drops of urine, and thus, by pressing the stone against the part, already too sensible to pain, an almost constant state of suffering is kept up. The bladder in time becomes more diseased, the inner coat constantly inflamed, and sometimes ulcerated: all the unfavorable constitutional symptoms increase, and unless an operation is performed, whereby the stone is removed, the patient's sufferings are only ended by death.

A very interesting case is reported by Sir James Earle, in the *Philosophical Transactions of the Royal Society* for 1809, in which a calculus was found in the bladder larger than any of which we have an equally well-authenticated account. About ten years after the symptoms of calculus were experienced, lithotomy was performed, and the extraction attempted by Mr. Cline, at the particular request of the patient. A considerable quantity of fragments was removed, but the great mass of the calculus could not be extracted, and after a few days, death ensued. On dissection, the bladder was found entirely filled, and even distended, by the stone: it weight forty-four ounces, and was sixteen inches in length. It seemed to have completely occupied the cavity of the pelvis, and to have projected beyond and rested upon the pubes. The pelvis of the kidneys and ureters were much enlarged, and the latter appeared to have been the receptacles of the urine. The stone on being analysed, was found to consist of the triple phosphate of ammonia and magnesia, with phosphate of lime mixed with an unusually large quantity of animal matter.

In females, calculi of a moderate size, as likewise extraneous substances which have accidentally escaped from the urethra into the bladder, have been extracted therefrom by gradually distending the former by means either of sponge tents or a bougie, observing to increase its size every day until the urethra has become sufficiently distended to allow the introduction of a pair of forceps; or we may employ an instrument constructed on the plan of a speculum ani, to enlarge the urethra, which will have the advantage of permitting the urine to escape in the meantime: whereas the former are liable to the objection of causing many hours of pain and retention of urine, while lying in the meatus. A knowledge of the possibility of removing calculi from the female bladder in this way, is worthy of being here noticed, as it may induce many to make trial of a mild means, instead of resorting hastily to a severe operation. This method of extraction has indeed been successfully performed by Sir Astley Cooper and others.

One great advantage of this mode is, that it may be employed as soon

as a small stone is discovered in the bladder, when it may be extracted with great ease, and at a time that a more dangerous, painful, and important operation would hardly be proposed.

When the preference is given to a palliative mode of treatment in males, instead of resorting to lithotomy, or other modes of removal already noticed, we must in that case have recourse to lithontriptics : these will prevent the farther accumulation of calculus matter. Of the class of lithontriptics, the alkalies seem to be the most powerful, and has indeed been most generally employed. It may be used both in its caustic and mild state.

It has been satisfactorily ascertained, that in the majority of cases the nuclei of calculi originate in the kidneys, and that of these nuclei by far the greater number consist of uric acid : the good effect, therefore, so frequently observed from the use of alkalies, arises, not from any actual solution of calculous matter, but from the power which they possess of diminishing the secretion of uric acid, and thereby preventing the enlargement of the calculus, so that while of a very small size it may probably be voided by the urethra.

Where alkalies fail to relieve the increased secretion of uric acid, and to prevent its forming calculi in the kidneys, and where they disagree with the stomach, magnesia has been found generally effectual ; and it may be persevered in for a considerable time without inconvenience, where the tendency to form uric acid remains.

It has long ago been observed, that gravelly or sabulous matter forms a constituent part all of urine ; that it is kept in chemical solution in this fluid, and is eliminated by it out of the system. This matter was proved by chemists to be of an acid nature, and to be possessed of peculiar properties. By Scheele it was denominated lithic acid, but more significantly by Dr. Pearson, uric acid, as pointing out its origin. The composition of different calculi, however, has been shown to be very different. Dr. Wollaston has particularly designated four species : 1st, the fusible calculus, consisting of a phosphoric acid, magnesia, and volatile alkali, and hence called by Fourcroy the ammoniaco-magnesian phosphate ; 2dly, the mulberry calculus, consisting chiefly of the oxalate of lime ; 3dly, the bone-earth calculus, made of phosphate of lime or animal earth ; and 4thly, the uric acid calculus. Calculi of the latter kind are, however, of far more frequent occurrence in urine, and are partly deposited on cooling ; but (unless where it is in unusual quantity) commonly requires for the purpose one, two, or three days, or till a beginning decomposition takes place.

The nucleus of a calculus from the bladder is most usually formed of uric acid, proving it of renal origin : more rarely the nucleus is agglutinated ammoniaco-magnesian phosphate. The most rare is the mulberry calculus, frequently consisting throughout of the oxalate of lime, as has already been observed. Where an extraneous body forms the nucleus, the surrounding depositions are generally mixtures of the phosphates. Those calculi that are formed of uric acid, are distinguished by their red or dark yellow color, being sometimes of a smooth, but generally rough surface. Those composed of a combination of uric acid with ammoniaco-magnesian phosphate, are of a pale or gray color, smooth, not



unfrequently of a crystalline surface. Those composed of oxalate of lime are known by the protuberances and irregularities of surface, (whence the name of mulberry calculi,) superior compactness, weight, and dark color.

Dr. Wollaston, in noticing four species of calculus, has at the same time pointed out the means of distinguishing one from the other, when even a small fragment can be procured for chemical examination. The uric acid calculus is soluble out of the body in very weak alkaline preparations, and also in lime water, but not acted upon by muriatic acid. The fusible calculus is partly soluble in water, highly so in the carbonic acid, and consequently more so in the weakest possible acid impregnations that can be employed; nothing more being necessary for the purpose than the addition of so many drops of weak muriatic acid as will scarcely impart an acid taste. The moriform calculi are the most difficult of solution, and are not acted upon by alkaline solvents; but Fourcroy found that nitric acid diffused in water, in time dissolves them almost entirely, except the animal matter.

The bone-earth calculi are soluble in muriatic acid.

In recommending the use of lithontriptics for calculi in the urinary organs, the physician ought therefore to endeavor to ascertain the nature of the concretion with which the patient is afflicted. Possibly some advantages might be derived by means of injections through the urethra, consisting of the substances found to dissolve calculi out of the body,—and the operation of lithotomy thereby be avoided.

*Treatment.*—In violent paroxysms, recourse must be had to fomentations and the warm or vapor bath, at the same time make free use of mucilaginous drinks.

During the paroxysms of pain occasioned by a stone, by injecting tepid water by means of the catheter and vegetable bottle affixed thereto, the bladder may be distended, and the stone thereby removed from the sensible spot at the neck thereof. If two or three ounces of the fluid be very slowly injected into the bladder, the excessive pain will be immediately initiated: but it is in cases of irritation and inflammation at the neck of the bladder, that this injection is of the most essential service.

In those diseases which arise from a relaxation of the kidneys and bladder, the uva ursi with the alkalies, will be likely to prove highly serviceable.

Some inquiries by Sir Everard Home into the functions of the stomach, led him to consider, that the generality of calculus complaints might possibly be prevented by introducing into this organ such substances as are capable of preventing the formation of uric acid; and that this mode of treatment would have many advantages over the usual method, which consists in attempting to dissolve the uric acid after it is formed. Magnesia was supposed by Sir Everard Home, from its insolubility in water, to be well adapted to this purpose, as it would remain in the stomach until it could combine with an acid, or be carried along with the food towards the pylorus. Upon putting this theory to the test of experiment, it was found, by a very careful examination of the urine, that in several instances where there was an increased formation of uric

acid, magnesia diminished it in a much greater degree than had been effected in the same patient by a very liberal use of alkalis.

An alkanic prepared from the ashes of the walnut is very efficacious in the uric form of gravel. Three ounces of the clear ashes may be put to one quart of sweet wine, and a wine-glassful taken three times a day.

The botanic practitioners have generally been very successful in the management of this distressing complaint; and we shall avail ourselves of some of their experience in our compilation of remedial measures.

Howard says, "as a solvent of the stone, the juice or decoction of garden radishes has been known to perform wonders; in some cases after an entire stoppage of urine had existed for many days, and in one case after the patient had been given over to die, and taken leave of his friends."

"Take of the roots of the Queen of the meadow, as much as will lay on the palm of the hand, and pour a quart of boiling water on it, which is to be drank freely and frequently; then take the same quantity of fibrous roots, of pool-root, and a piece of the root of masterwort, as large as the finger, and about two inches long, sliced up, and put them into a quart-bottle, which must be filled, with equal parts, of whiskey and water. As soon as the liquor has imbibed the virtues of the roots, the patient must take a wine-glassful of it, three times a day before eating. If, however, it produces a burning sensation in the stomach, as it sometimes does if much weakened by disease, less of it must be taken, and the dose gradually increased as the strength will bear it. This course must be pursued until a cure is effected, which will require but a few days, if the case is a recent or mild one; the stone, as it is dissolved, will be discharged with urine like sand."

"Again, a tea of the Queen of the meadow is to be used as directed above, and continued until the urinary discharges become like chalk. At the same time the patient is pursuing this course injections into the bladder, should be made of the following preparations: Take equal parts of red rasp-berry leaves, and the inner bark of slippery elm, and make a strong decoction to a tea-cupful of which, add two tea-spoonsful of the tincture of myrrh, or No. 6. In using these injections the patient is recommended to pursue the same course as before noticed. He should drink frequently of a decoction of hemlock and poplar."

"The man-root is also highly recommended, and should be taken in moderate doses, several times a day. The above is about the amount of the treatment," that Howard recommends.

The following is a synopsis of Dr. Curtis treatment:

"We have treated a number of bad cases and cured them all. The plan and remedies are so nearly the same as that given for the diabetes that it is scarcely necessary to vary from it. Steam the pelvic region long and thoroughly, and use many injections. In both cases wear a pelvic jacket, made of flannel."

"*Diabetes.*—Full courses of medicine, steaming the lower half thoroughly; use constantly injections to the urethra, first of cayenne, bayberry, lobelia and No. 6; and immediately afterwards of cayenne, composition, witch hacle, No. 6, and slippery elm. The first cleanse,

the second restore. Rub the surface often with stimulating liniments, such as vinegar, and cayenne, &c.; cleavers, smart weed, motherwort, and boneset tea, will be good for common drink in the mean time."—*Bot. Med. Recorder*, Vol. 6, p. 96.

"I have had ten or twelve cases of gravel that had been given up by the Drs. in this section of the country. As a rebe facient, the oil of onions, half an ounce, cayenne, half an ounce, third preparation, one ounce mixed; to eat as many onions as they can, and drink the juice made into tea; use injections to the rectum of composition and slippery elm; and if needed, by catheter to the urethra, of sweet oil, and onion juice, and No. 6, and drink enough composition to keep up perspiration.

ISAAC CRAWFORD.

New Athens, Ohio."—*Bot. Med. Recorder*, Vol. 8, p. 18.

The following as an internal remedy has often been used, and with uniform success in gravel; and in one instance we are assured it proved a solvent to the stone, which was known to exist in the bladder as well, by every marked indication, as by the introduction of the sound.

The juice of the red onion (red, it is supposed, from the fact of its being stronger) given to the amount of two thirds of a wine-glass, three times a day; and in the intermediate time, the patient is to drink freely and plentifully of the decoction made of the horse-radish and horse-mint.

Diuretics should also be frequently taken by the patient to remove the sediments.

To regulate and simplify the diet will be found highly important in our curative and preventive indications in all cases of gravel and stone; and vegetable, as being more readily digestible and more easily assimilated by some weak stomachs than animal food, and as containing no azote (which the latter does, as before observed) is much more appropriate fare for individuals subject to these disorders. In the greater number of cases of gravel such is the quantity of uric acid formed, and such is the want of solubility of this substance, that, however, abundant the urine may naturally be, it is not sufficient to hold the uric acid in solution, nor consequently to prevent the formation of gravel. We ought therefore, in diseases of this nature, to endeavor to increase the secretion of urine, by directing the patient to drink copiously of aqueous fluids which are known to be diuretic. Spring or soft water will be preferable to pump water. From various experiments we seem authorized in concluding, that acids are prejudicial, and give rise, in those disposed to these complaints, to the formation of gravelly and calculus concretions, by causing a separation and crystallization of the uric acid contents of the urine within the body. It is indeed a matter of common observation, that calculus and gravelly complaints are aggravated by acid and acescent drinks of all kinds, and that alkaline substances alleviate these disorders.

## ULCERS.

ULCERS present themselves in very various forms; but it is sufficient, in a general view of the subject, to consider four kinds: viz., the *healthy*, the *irritable*, the *indolent*, and the *specific*.

However, before proceeding further, it seems right to state that sores of every description are chasms or breaches formed in the substance of the body, by a process termed *ulceration*, in which the absorbents of the part remove the old particles back into the system more quickly than the new ones are laid down by the secerning arteries; or sometimes sores are the consequence of wounds which have not united by the first intention; or they are the immediate result of the separation of mortified portions of the body.

1. *Healthy ulcers*.—Healthy ulcers secrete white, thick pus, which does not adhere to the surface; and their granulations are small, florid, and pointed at top. As soon as the granulations have risen to the level of the surrounding skin, those next the old skin become smooth, and covered with a thin semi-transparent film, which afterwards becomes opaque, and forms cuticle.

An ulcer answering this description is in a healthy state, and the surgeon can only be useful by keeping the surrounding skin clean, applying soft scraped lint to absorb the redundant quantity of matter, and covering this simple dressing with a pledget of any unirritating ointment, with a view of preventing evaporation from the surface of the sore; a thing which would lead to the formation of a scab, and often change the favorable condition of the ulcer.

A roller may be applied, unless it should seem to act perniciously.—In most instances it not only serves to retain the dressings, and as a kind of defence to the sore, but also to support the muscles and skin, which are frequently loose and flabby, from the want of natural exercise of the limb.

2. *Irritable ulcers*.—Irritable ulcers cannot always be known by their appearance, though, in many instances, they can be so discriminated. A sore will invariably partake very much of the nature of the constitution, and when this is known to be irritable, the local complaint will also be often found to be so. A physician, however, is frequently quite unaware of this quality of an ulcer under care, until perhaps, at the end of a little time, not finding the sore heal sufficiently quickly, he ventures to apply some stimulating application, or to roll the bandage round the limb more tightly than before. The next day he is mortified to find that his patient has passed a miserable night, and several discolored sloughy places have formed on the surface, and also at the circumference of the sore. At other parts the granulations have been rapidly absorbed; and whatever matter lies on the surface of the ulcer is diminished in quantity, and of a blackish, fetid quality.

Some appearances at once show the ulcer to be of an irritable kind. When the margin of the surrounding skin is jagged, and terminates in a sharp, undermined edge; when the bottom of the ulcer is made up of concavities of different sizes; when there is no distinct appearance of granulations, but only of a whitish, spongy substance, covered with a



thin ichorous discharge; when touching the surface causes pain, and very often hæmorrhage; the sore may be set down as an irritable one.

Irritable ulcers are often situated upon the lower part of the leg, or ankle, and on the shin bone.

The applications to irritable ulcers should be of the sedative kind.—The steam of warm water acts very beneficially on these cases.

*Treatment.*—Emollient poultices may be employed as the continued application, and that made of linseed is the best. It is frequently particularly serviceable to lay immediately over the surface of the sore, under the poultice, lint dipped in a dilution of the chloride of soda.—When the weight of the poultice seems to have a bad effect, the lint wet with the above lotion, may be covered with a pledget of simple ointment.

The carrot poultice, particularly when made by boiling the vegetable, and beating it into a pulp, deserves to be noticed as a remedy which agrees with as many irritable sores as any thing known.

Powdered charcoal and cream have obtained reput<sup>ion</sup> for their good effects on irritable ulcers.

Bandages, so used as to make pressure, are always pernicious to irritable ulcers.

3. *Indolent ulcers.*—The appearance of indolent ulcers are, the very reverse of those characterising irritable ones. The edges of the surrounding skin are thick, prominent, smooth, and rounded. The granulations are smooth and glossy, the pus is imperfectly formed, and is blended with flakes of coagulating lymph, which adheres so firmly to the surface of the ulcer that it can hardly be wiped away. The bottom of the sore forms almost a level, and its general aspect gives the idea of a portion of the skin and parts underneath having been for some time removed, and the exposed surface not having commenced any new action to fill up the cavity.

This is the most genuine indolent ulcer; in other cases the appearances bear some resemblance to those of that opposite kind of sore, the irritable one.

Indolent ulcers form the majority of those which are to be seen in the large hospitals. Their granulations are endued with a weak living principle, and are very apt to be suddenly absorbed without any assignable cause.

When poultices are improperly applied a long time to indolent ulcers, the chasms will be filled up with large, loose, pale, glossy granulations, which would never acquire the power of forming a durable cicatrix, if the same relaxing treatment were to be continued. These weak, unhealthy granulations, when stimulated by topical applications, undergo a considerable change, becoming smaller, more compact, red, and free from their glossy appearance; and the cicatrix which follows is more apt to continue healed than when the sores have been healed by relaxing applications.

*Treatment.*—There is a great degree of insensibility of the parts, and in the cavity itself in this form of ulcer; and to excite an action, the cavity may be filled with equal parts of capsicum and pulverised lobelia, over which a broad adhesive strip should be applied. This dressing is

to be applied daily, and at each renewal the parts washed with No. 6. If the surrounding integuments appear somewhat swollen, or pit (leave the impression of the finger for some time when hard pressed upon it) a poultice of the lees of No. 6, either alone or in compound with bran, may be applied with great advantage for the purpose of exciting an healthy cutaneous action.

Frequently a course or two of medicine is followed by rapid amendment in the affected parts. As soon as a healthy action is brought about, simple salves may be used.

In connexion with this subject, much might be said on a new escarotic, which, were it more generally used, would be more highly valued as an external, than internal medicine. This is the common blood root. The irritable ulcers are exceedingly hard to heal: they are not unfrequently met with, two and three inches in diameter. A thin, ichorous discharge is floating over the surface, which seems to destroy the surrounding flesh with great rapidity, while the edges of the sore become prominent, rough, and inflamed; bleeding from the slightest causes. Under such circumstances, a free use of the pulverised root soon changes the condition of the sore to a healthy appearance; the inflammation abates, the quality of the matter is altogether better, and the healing process will soon be apparent.

Soldiers and sailors, of intemperate habits, who, perhaps, may have a venereal taint in the system in old age, are remarkably predisposed to this kind of ulcer, on the shin, and on the ankles. They are frequently noticed in marine hospitals, of fifteen years standing. These are cases in which reliance may be had on the blood root. It should be sprinkled on three and four times a day: the sore being occasionally cleansed with soap-suds. A physician, of extensive practice, has found this a remedy of peculiar efficacy in those spongy, fetid ulcers of the mamma, which attack women in advanced life.

4. *Ulcers with specific action.*—By a *specific* ulcer is implied one which is complicated with some peculiar morbid action, owing to the state of the constitution or to the disposition of the part affected. The varieties of such ulcers are almost numberless, and baffle description. Scrofulous and venereal sores are specific, and are noticed in other parts of the present work; cancers and the *noli me tangere*, partake of a specific nature. Inveterate ulcers, into which many venereal local affections change, after the syphilitic action has been destroyed, are specific; but, as they are mentioned under that head, nothing further is requisite to be said concerning them in this place.

Ulcers occur on the instep and foot with a very thickened edge, and a diseased state of the surrounding skin, very similar to elephantiasis in appearance.

There is a kind of ulcer which does not extend deeper than the cutis, but spreads in all directions. The specific morbid action does not continue in the parts which have ulcerated, but only affects the edge of the skin, where the ulcer is increasing; for the surface first affected heals, while the parts beyond are in a state of ulceration. For such ulcers, of which there are several varieties, the third preparation is the best application.

The last specific ulcer which may be mentioned, is the *fungoid* one. It is seen on the calf of the leg and sole of the foot, shooting out a fungus from the surface. The new-formed substance is externally broad, and narrow at its root; it is tender, and bleeds from very slight causes. The disease in its origin somewhat resembles a scrofulous affection of the metatarsal bones, until the skin ulcerates and the fungus protrudes.

One species of this ulcer contaminates the lymphatic glands in the course of absorption; another kind does not so.

*Treatment.*—Thorough courses of medicine, with local and constitutional remedies to suit particular cases.

## SCALDS, AND BURNS.

In almost all cases of burns and scalds, there arises soon after the infliction of the injury a sense of coldness amounting to shivering. This commonly soon goes off, and in those cases where there is increased action alone, the symptoms of inflammatory fever supervene. But when the injury has been more violent, when exhaustion has followed immoderate excitement, the shivering is severe and long-continued, and seldom followed by re-action.

In all accidents from scalds and burns, it seems to be of the utmost importance to apply a remedy at the instant; for by this means the violent anguish is allayed, and vesication, which in scalds at least is usually so considerable as to lay the foundation for a tedious curative process, is in a great degree prevented.

*Treatment.*—Much certainly depends on the constitutional variety of the subject, as well as on the different degrees of injury that may be sustained. It may be the favorite practice of some to apply cold water immediately to the part affected; and this may possibly answer in cases of superficial burns or scalds upon the limbs, where other remedies are not at hand—but *never*, when the injury is deep-seated, and particularly over a vital part.

One of the best remedies for burns or scalds, and which doubtless is within the reach of every family, is equal parts of soot and fresh lard mixed together. The soot should be pulverised in a mortar; or laid upon a smooth board, and rubbed with the flat surface of a caseknife or some other substance until fine.

The compound may be spread upon cotton cloth, and the whole surface of the injury covered.

Canada balsam, either alone or conjoined with sweet oil, is also an excellent remedy.

The best stimulation may be necessary in some severe burns to promote even a re-action of the system; No. 6, will prove most salutary in this indication, and may be administered internally as well as applied externally. To hasten suppuration the slippery elm poultice may be intermediately applied with the above remedies.

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## HERPES.

THE term *herpes* was formerly applied in a very vague manner; and the German writers still include under its head various chronic affections of the skin, which by the late English and French writers, are regarded as wholly diverse from each other. Willan first employed it in a different manner, and restricted its application to a distinct class of cutaneous affections, characterised by an *eruption of vesicles, appearing in groups or clusters on an inflamed surface, so as to present one or more distinct spots separated from each other by intervals of sound skin*. In most instances, manifest constitutional disorder, such as langor, loss of appetite, restlessness, and occasionally febrile symptoms, with a burning or stinging sensation, or deep-seated aching pain in the affected parts, precede the appearance of the eruption. There is a regular increase, maturation, and decline, in the progress of the eruption, but the duration of its course varies from one to three weeks. The fluid in the vesicles is at first limpid, becoming opaque or whey-like and more viscid as the disease advances, and at last either concretes into brown crusts, or the vesicles break, and suffer it to escape, giving rise often to disagreeable and unmanageable ulcerations.

The *diagnosis* of herpes is founded on the assemblage of the vesicles in separate clusters, the red or inflamed state of the skin upon which they are seated, and the natural color of the intermediate spaces of skin. These characteristics distinguish it sufficiently from erysipelas. From tetter (impetigo,) eczema, and other forms of chronic eruptions, it differs in its purely vesicular form, its more acute character, and particularly in the regular progress of the vesicles from their incipient transparent state to maturation, and finally scabbing.

Herpes admits of being divided into different varieties, according to the particular form of the vesicular clusters, and the part of the body upon which they appear.

1. *Herpes Phlyctenodes*.—This variety of herpes may occur on all parts of the body, having no determined form or seat. The appearance of the eruption is usually preceded, for several days, by slight febrile symptoms, and these sometimes continue after the vesicles have come out.—On the part which is about to be the seat of the eruption, we may at first notice a multitude of very minute red points. In the course of twenty or twenty-four hours more, the skin upon which these points appear, becomes uniformly red, and small transparent vesicles make their appearance. The cutaneous efflorescence extends a few lines beyond



the margin of the vesicular group; and the vesicles themselves are firm and resisting to the touch during the first day. A sense of smarting, and occasionally a dull and severe pain, accompanies the appearance of the eruption.

The eruption most commonly occurs on the upper parts of the body, particularly on the neck, breast, arms, and cheeks. It consists of small transparent vesicles, aggregated into irregular clusters of various sizes, from a few to nine or ten inches in circumference. These vesicles are sometimes very minute, and at others they are as large as a small cherry. In some instances they come out at first on the neck or breast, and gradually extend over the trunk to the lower extremities, new clusters successively appearing for nearly the space of a week. This gradual extension of the eruption occurs very rarely, however, except in cases where the vesicles are very minute. In general, the eruption is confined to one or two groups when the vesicles are pretty large. About the fourth or fifth day the vesicles either burst and give exit to the included fluid, or they begin to wither and concrete into yellowish scabs, which usually fall off about the eighth or tenth day, and leave a red and irritable surface. When the eruption appears in successive groups on different parts, the disease will of course be proportionably prolonged; for each cluster passes regularly through its stages of maturation and scabbing. However contiguous the groups of vesicles may be to each other, the intervening skin always retains its healthy appearance.

*Diagnosis.*—The only affection with which the present form of herpes is particularly liable to be confounded is *pemphigus*; but an attention to the circumstance that the vesicles in pemphigus are usually large, and always isolated—or at least not aggregated in clusters; and that they are very rarely attended with a red or inflamed basis, (unless where the bullæ are nearly in contact with each other,) will enable us without difficulty to distinguish these affections.

*Causes.*—Children, and young and robust persons, appear to be most liable to this affection; but of its predisposing and exciting causes we have no definite knowledge. Cold, improper nourishment, or an excess of food, grief, watching, and irritation in the primæ viæ, have been supposed to exercise an agency in its development.

2. *Herpes Zoster.*—*Shingles, Zona.*—This disease bears a very close resemblance to erysipelas, and was generally regarded as a mere variety of this affection, until Willan pointed out its distinctive characters, and placed it with the herpetic eruptions. This form of herpes is characterised by a band of vesicles, seated on a red, or inflamed surface, commencing usually either in the right hypochondrium or lumbar region, and extending like a belt towards the fore part of the abdomen, without however crossing the median line. In some instances this band of vesicles passes down to the groin; in others it passes upwards to the inferior angle of the scapula, and sometimes extends to the internal part of the arm, running down occasionally to the cubital border of the hand. It has never been found to occur on both sides at the same time. These vesicular zones are composed of irregular groups, from one to two or three inches in diameter; and where the clusters are not very close to each other, the intermediate skin retains its healthy color. The exten-

sion of the band does not occur by a regular succession of vesicles, but by successive new clusters coming out nearly in a line with the first.—This, like the preceding variety of herpes, is generally preceded for a few days with loss of appetite, lassitude, slight headache, nausea, more or less febrile irritation, together with a scalding heat and tingling in the skin, and shooting pains through the chest and epigastrium. In some instances, however, little or no constitutional symptoms can be perceived. At first vividly red blotches appear arranged into an irregular belt, a short distance from each other. Upon these inflamed surfaces, a number of small whitish points appear, which soon increase in size, and become distinct transparent vesicles of the size and appearance of small pearls. These vesicles increase in magnitude until the third or fourth day, when they acquire a yellowish or milky appearance, and on the following day begin to shrivel, at the same time that their bases acquire a darker red, or bluish color. The vesicles about this time break and discharge a viscid serous fluid which dries into brownish crusts, which fall off about the tenth or twelfth day. Sometimes excoriations and occasionally superficial ulceration occur, leaving strongly marked cicatrices.

The disease does not, however, always pursue this regular course.—In some instances the vesicles dry up about the fifth or sixth day—the fluid in them being absorbed—and terminate without scabbing, by desquamation. In old and enfeebled subjects, the eruption has been known to terminate in gangrenous ulceration of the skin.

*Causes.*—Zona is most apt to attack young persons; and it is said to occur more frequently in males than females. Reil asserts that this affection has never been observed in children under three years old. It seems occasionally to arise from the influence of cold; and some have ascribed its occurrence to irritation of the urinary organs. Disorder or irritation of the primæ viæ, and perhaps of the biliary organs, has appeared in some instances to be at the root of the disease. It is said to have prevailed epidemically.

This form of herpes is but rarely attended with severe symptoms.—When it terminates in ulceration it may become troublesome; and the occurrence of gangrene, which, however, is very uncommon, will of course be attended with more or less danger, according to its extent and the patient's constitutional vigor.

3. *Herpes Circinatus.*—*Ringworm.*—This form of herpes is easily recognised by the annular arrangement of its small vesicles. It commences with slight redness and itching, succeeded by a circle of minute globular vesicles closely set together, which, when closely examined, are found to contain a colorless fluid. These coronæ of vesicles vary from an eighth of an inch to two inches and upwards in diameter, and the larger ones leave the central portion of the skin apparently in a natural state. The vesicles break in four or five days after their appearance, and are succeeded by little prominent, brownish, and thin crusts or scales, which in the majority of cases fall off about the eighth or ninth day, leaving a red surface which gradually disappears. Occasionally the whole disk of the circle is somewhat inflamed, and a slight desquamation occurs without the formation of vesicles. When the circles are very

small, the eruption withers, and gradually exfoliates without the formation of crusts or scales. Although the eruption is seldom protracted beyond the tenth day, yet in many instances new circles of vesicles appear, in succession, so as to prolong the whole course of the disease for several weeks. The eruption is always attended with a troublesome itching and tingling sensation.

This variety of herpes is most frequently met with in children, and occurs generally on the arms, shoulders, breast, and especially on the neck and face.

This disease must not be confounded with a somewhat similar affection which occurs only on the scalp, and which is familiarly known by the term *hair-worm*. This disease is contagious, destroys the hair, and is pustular. Its duration is indefinite and long, and it gives rise to the formation of thick adherent scabs.

There is a variety of ring-worm, not noticed in the work of Cazenave, though described by Bateman, which is by no means uncommon in this country, and which often continues for many months, and at last takes up a large extent of surface. It commences with a small circle of vesicles, like the form just described. This circle, however, gradually enlarges its circumference, by the successive appearance of new vesicles around the external margin of the ring, whilst those situated on its internal margin heal and desquamate.

*Treatment.*—The principles of treatment in the species of *herpes* already mentioned, are conducted on the same plan. Gentle aperients, a simple, unirritating diet and rest, will, in general, answer for the constitutional treatment.

As a local application the narrow-leaved dock is a sovereign remedy. It may be prepared by boiling the grated root in lard; or the grated substance applied in the form of a poultice; or it may be made into an extract, and then formed into a liniment with other ingredients.

4. *Herpes Labialis.*—This is a vesicular eruption which occurs on the upper and under lips, and particularly at the outer angle of the lips, extending sometimes nearly round the mouth, and occasionally to the cheeks, *alæ nasi*, and chin. In some instances this eruption appears almost suddenly, without any previous redness or disagreeable sensation in the part; and at others it is preceded by a slight tenderness or pain, inflammation and swelling of the skin, for three or four hours. The lip generally becomes somewhat swollen, hard, stiff, and tender. The vesicles sometimes attain the size of a small pea, and are filled with a transparent fluid, which soon becomes opaque, acquiring a straw-color, or sero-purulent appearance, during the third or fourth day. In the course of a day more they shrivel, and are succeeded by light-brown scabs, which usually separate on the seventh or eighth day. This eruption is always attended with very considerable heat and smarting, and great soreness to the touch.

This variety of herpes does not often occur as an idiopathic affection. It generally appears on the subsidence of slight febrile affections from cold, as well as on the declension of other acute diseases, more especially such as are connected with visceral affections. It may in fact be considered, in cases of this kind, as a phenomenon of crisis, for it is a com-

mon, and in general not an incorrect observation, that the occurrence of this eruption indicates the near approach of convalescence. In many instances it is accompanied by coryza, and pain or tenderness in the fauces. It may be produced by irritating applications to the lips.

Some mild oleaginous substance to palliate the burning heat and pain, when these are troublesome, is the only remediate application necessary.

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## LICHEN.

THIS affection is characterised by minute firm elevations or pimples, (papulæ,) generally appearing in clusters, usually of a white color, sometimes red, and attended with considerable itching. Systematic writers describe many varieties of the disease.

The disease almost invariably commences with transient flushes of heat in the face; lassitude; a slightly accelerated pulse and occasionally severe headache; weakness; painful sensations in the stomach, and general febrile irritation. The eruption consists of red and inflamed miliary pimples, attended with heat and itching. In three or four days the redness begins to fade, and on the following day desquamation commences, which is usually completed in three or four days more, unless successive crops of papulæ appear, which sometimes occur. In the chronic variety of simple lichen, the pimples are usually white, and but slightly or not at all inflamed. The eruption is preceded by moderate itching. The papulæ are seldom very perceptible, but in passing the hand over the skin it receives the sensation of a slight roughness from the firm elevations on the surface. Its course is tedious, and of uncertain duration, lasting often several months. The skin becomes thickened, and at last exfoliates in large scales. *Acute* lichen occurs most commonly on the face and body; the *chronic*, on the extremities, more especially on the back of the hands.

In irritable habits it sometimes returns every summer. Persons subject to gastric pains and headache, are sometimes affected with this eruption, as if by crisis, when these affections go off. Sometimes the pimples occupy the roots of the hairs of the skin. And in this case the disease generally continues long. In some instances the papulæ appear in patches or groups, well defined, and approaching to the circular form.—These spread at the same time that the central part heals and exfoliates, remaining, however, slightly red and scurfy. Occasionally the patches are livid, the pimples being soft and flat. These are sometimes mixed with dark red or purple maculæ from sanguineous extravasation, occurring most commonly on the lower extremities of relaxed debilitated subjects. The eruption is sometimes disposed into the form of a long stripe or band, extending in a spiral manner round an extremity. At times the eruption consists of larger pimples than the usual size. They are inflamed, prominent, large, confluent, and resemble the stings of a nettle. They come out suddenly on the face or neck, particularly in



young persons and females in the summer. A burning pain and considerable itching attends. They usually disappear in a short time, but often return at irregular intervals. Infants at the breast are subject to a modification of this eruption, in which the papule are either redder or whiter than the skin, and attended with great itching, which is much increased by the heat of the bed. It is acute in its character, and subject to distinct exacerbations.

Another form is conspicuously febrile; the eruption consists of a multitude of vividly red miliary pimples, aggregated into large patches, seated on a diffused erythematous surface. Itching, heat, and a sense of painful tingling, greatly increased by the heat of the bed, by active exercise, and stimulating ingesta, are experienced. Morning remissions and evening exacerbations occur. The skin around the patches are generally painful and somewhat swollen. The eruption and general symptoms usually increase until about the fourth or fifth day, when small ulcerations appear on the summit of the pimples, discharging a sero-purulent fluid, which concretes into small, yellow, prominent crusts. These finally fall off, and are succeeded by thin scales. The disease usually continues from twelve to fifteen days. The itching and stinging sensation in this variety of the disease is often extremely violent. In many instances the eruption appears and disappears several times before it finally goes off. The skin of the affected parts generally, at last, becomes harsh, chappy, and extremely painful when rubbed. This variety may terminate in a chronic pustular affection. When the eruption recedes, from exposure to cold, it is apt to be followed by an increase of fever, headache, vomiting, and colic pains. *Simple lichen* may assume this form of the disease. Lichen may also acquire a chronic character. In this case the cuticle becomes harsh, hard, full of fissures, dry, and rough, particularly in the hollow of the articulations.

*Causes.*—Lichen occurs in persons of all ages, and in both sexes.—Summer and spring are the seasons most favorable to its occurrence. High temperature, particularly the heat of the sun, is apt to excite it.—Mental affections, stimulating potations habitually indulged in, gastrointestinal irritation, and internal inflammations, are mentioned among its most obvious causes.

Simple lichen may be distinguished from *eczema* by its acuminated, solid, and very prurient pimples; the eruption of *eczema* consisting of transparent vesicles, attended only with slight smarting pain. From *scabies*, lichen may be known by the distinct vesicular character of the former, and its usual location on the bends of the joints and between the fingers. The vesicles of lichen are aggregated in clusters.

*Prognosis.*—Lichen is never a dangerous, but sometimes an extremely troublesome and disagreeable affection. The precursory fever is seldom so great as to keep the patient confined, and in the majority of instances it is wholly absent. By violent friction and scratching, and sometimes spontaneously, severe excoriations and burning pain occasionally occur, which are almost always difficult to remove. When the eruption is repelled by improper applications, or by other injurious influences, as cold, severe fever, internal inflammations, great heat, thirst, fixed pains in the abdomen, vomiting, &c. sometimes ensue.

*Treatment.*—Courses of medicine, frequent tepid bathing, mild laxatives; and externally a strong infusion of bayberry and blood-root.

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## ECZEMA.

ECZEMA is a vesicular eruption, which occurs both in an acute and chronic form. Cazenave and Schedel divide acute eczema into three varieties, namely, *E. simplex*, *E. rubrum*, and *E. impetiginodes*.

1. *E. simplex*.—The eruption consists of innumerable small, closely approximated, transparent vesicles, without any surrounding inflammation, distributed over a greater or less extent of the surface—the skin every where retaining its natural color. No premonitory symptoms, but only a slight itching, precede the eruption. The fluid in the vesicles soon becomes opaque, and after a short period is absorbed; the vesicles then shrivel, and the cuticle desquamates slowly. It never spontaneously gives rise to inflamed surfaces. This eruption is usually local, or confined to certain parts—commonly the arms and between the fingers, and being attended with severe pruritus, may be mistaken for the itch.—Heating and irritating applications to the skin often produce this affection. It often appears between the fingers of women in child-bed; and in persons who are much exposed to the heat of a fire. It is sometimes associated with itch, and appears to be excited by the irritating remedies usually employed for the cure of that affection.

2. *Eczema rubrum*.—Heat, stiffness, and some tingling in the skin, precede the eruption in this variety. The affected surface is inflamed and vividly red, covered with very minute acuminate pimples, of a shining white or pearly hue. After some time, vesicles of the size of a pin's head, surrounded with distinct red areolæ, appear on the affected parts. In the course of six or seven days, the contained fluid is absorbed, the vesicles shrivel and desquamate, leaving a pale red surface, sprinkled with minute rounded papulæ, each rising from a small whitish disk. In some instances the cutaneous inflammation increases, and continues beyond its ordinary duration; the vesicles become confluent, break, and discharge an irritating fluid, which causes superficial excoriations; and at last, concrete into large, thin, pliant scales, leaving inflamed surfaces on falling off.

3. *Eczema impetiginodes*.—Violent inflammation, swelling of the affected parts, and vesicles generally congregated or confluent, filled with a *sero-purulent fluid*, are the principal characteristics of this variety of the disease. These purulent vesicles soon break, and the fluid concretes into soft, yellowish, and often extensive scales, or thin crusts. When these fall off, they leave red surfaces, exuding a reddish fluid, which dries into thin laminae. The eruption is commonly confined to a particular part, or even a single spot. Occasionally, however, it occurs over the whole body, and is attended with considerable fever. The disease may continue from ten to twenty days, and upwards. The vesicles are generally

transparent at first, and become pustular afterwards. This variety also sometimes assumes a chronic character, resembling then the chronic state of *eczema rubrum*.

4. *Chronic eczema*.—When acute eczema is very severe, it often terminates in chronic excoriations and fissures of the skin on different parts of the body, particularly in the bends of the knees and elbows, and about the axillæ. The parts thus irritated and inflamed, exude an abundance of serous fluid, which causes the linen to adhere to them. In this state it usually remains for several months, the discharge continuing undiminished. In some instances, the exuded serum dries into soft, yellowish, and thin crusts, leaving an inflamed and nearly dry surface when they fall off. These crusts form at greater intervals; they become drier, and the disease seems on the point of disappearing, when on a sudden, and without any assignable cause, the inflammation acquires greater intensity. New vesicles arise, which, like the former, soon break and discharge their fluid; and the affection goes through the same course, and the disease may thus last for years. Sometimes, the thickened, red, fissured skin, remains dry, and the crusts are drier, more firmly attached, and of a brownish yellow hue; leaving but a slightly red surface when they separate. Occasionally, indeed, the skin for a long time remains vividly red, cracked, with dry scales of altered cuticle thinly scattered over the surface. Chronic eczema commences on a limited portion of the skin, often not above a few inches in diameter, and spreads afterwards over a greater or less extent of the surface. The itching is always very great, and returns by spells, causing an irresistible desire to scratch.

The parts furnished with hair, the region of the pubis, the arm-pits, groin, scrotum, pudendum, and the bends of the joints, are most apt to become the seat of eczema, although every part of the body may become affected with it.

*Causes*.—Though not contagious, yet instances do occasionally occur, in which this disease is communicated from one to another by protracted contact. It occurs more frequently in women than in men, and in the warm than in the cold seasons. Its general cause is unknown. It may be excited by direct irritating applications to the skin, as a blister, sinapisms, turpentine valerian root, the rays of the sun, dry frictions, and irritating ointments, lime, and sugar. The use of mercury, when long continued, sometimes produces a very severe variety of eczema.

*Diagnosis*.—*Simple eczema* often greatly resembles itch. They may be distinguished by the following circumstances: In eczema, the vesicles are flat or rounded; in itch, pointed; in the former they are nearly or entirely in contact with each other; in the latter, they are single and considerably separated. The itching of eczema is attended with smarting pain; in itch, the pruritus is rather agreeable than painful.

See treatment of Lichen.

## ERYTHEMA.

THE term erythema, is applied to a cutaneous affection, characterised by a slight superficial irregularly circumscribed redness of some portion of the skin, attended with symptoms of constitutional disorder. It is most commonly seated on the face, breast, and extremities, and continues usually from one to two weeks. It appears generally as a symptomatic affection—although in many instances it occurs without being preceded by any obvious constitutional symptoms. Superficial spots of a vividly red color, variable in size, and attended usually with very slight heat and pain, come out on a greater or less extent of the surface. When these spots are pressed with the finger, the redness disappears for a moment, as in erysipelas. In some instances, not the slightest tumefaction attends; but in others, the spots become swollen and firm to the touch.— Sometimes the bright red patches are irregularly rounded, and present on their first appearance a slightly elevated rough or papulated surface. In a few days the redness becomes more vivid, and afterwards changes to a violent hue, particularly on the central parts of the patches. The slight swelling subsides in the course of the second day, but the redness continues from about ten to fourteen days. This variety of the disease is most frequently met with in females and young persons, and is usually seated on the neck, breast, and arms. It is sometimes attended with much general disorder—such as anorexia; a small and frequent pulse; great depression of strength and spirits; and acute pain in the limbs. In most instances, however, the constitutional symptoms are slight. In some cases small slightly elevated tumors are interspersed through the patches, which continue six or seven days before they disappear—the redness going on for about a week longer. This eruption frequently appears also in the form of red oval spots, usually seated on the anterior part of the legs, and sometimes, though rarely, on other parts—as the chin and arms. The spots become elevated towards the centre, and are firm and painful to the touch, presenting the appearance of slight nodes when seated on the tibia. These protuberances rise slowly, and subside about the eighth or ninth day, at the same time that their color becomes bluish, as from a bruise. This variety of the disease is preceded for four or five days by moderate fever, general uneasiness, and depression of strength.

*Causes.*—Erythema may be produced by the direct action of irritating agents on the skin, such as the direct rays of the sun; acrid secretions or discharges remaining long in contact with the skin; and by the chafing of two contiguous surfaces, as between the breasts, in the arm-pits, groin, and on the buttocks and internal parts of the thighs from riding on horseback. It occurs symptomatically from intestinal irritation, dentition, menstrual irregularities, particularly about the decline of the menses, from irritation in the stomach, and in almost every form of acute disease. It is sometimes associated in œdema, or anasarca of the legs.

From erysipelas, erythema is distinguished by the limited extent of the spots; the absence of pain, of vesication, and of tumefaction; and the mild nature of the disease. From *roseola* it differs in its vivid redness, and in the less distinctly defined circumference of its spots or



patches. The spots of roseola are never raised above the surrounding skin; those of erythema nodosum are. Erythema papulatum may be known from *urticaria* by the greater elevation of the latter, and the great itching which always attends, as well as by its irregular and often rapid course. The absence of itching in erythema distinguishes it also from *lichen*.

*Treatment*.—Light diet, gentle diaphoretics, the internal use of laxatives; warm baths, tepid ablutions, and soothing applications when it occurs from the friction of surfaces, comprise all that is necessary in idiopathic erythema.

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## ROSEOLA.

This affection consists of rose-colored spots, of various forms, without swelling or elevation of the skin or papule, and is usually preceded and accompanied by febrile symptoms. These efflorescences may occur over the whole surface of the body, but they are usually confined to one or more parts. Its course varies in duration from one to about six or seven days. Sometimes the rose-red spots are nearly circular, contiguous to each other, and not above three or four lines in diameter. They are usually connected with disorder of the stomach and bowels, and occur almost exclusively in infants; and they seldom last longer than thirty-six hours. During dentition these spots are apt to assume an irregular and nearly confluent appearance, and generally succeed violent symptoms of gastro-intestinal disorder, such as vomiting, diarrhœa, and fever.

There is a variety of this eruption which has been mistaken for measles, and which is most apt to occur in children during summer. It commences with chills, languor, headache, followed by febrile reaction, and occasionally delirium, and even convulsions. The skin is hot and dry, the bowels are constipated or affected with diarrhœa, and the appetite wholly depressed. From the third to the seventh day after the commencement of these symptoms, the eruption makes its appearance, first on the face and neck, and then gradually spreads over a greater or less extent of the surface of the body. The spots are usually from one to three lines in diameter, resembling the spots produced by touching bibulous paper with the point of a pen dipped in red ink. When the eruption is very copious, the spots run into each other in some parts of the body, but the roseolous points may still be distinguished on the red surface. These spots are not in the slightest degree elevated, yet when the patient has been kept too warm, or when heating diaphoretics are used, a papular eruption is apt to appear along with the roseolous spots. The eruption is attended with troublesome itching, and the febrile irritation continues until it disappears with the eruption. It is often attended with sore throat, or painful deglutition, but not with coryza, inflamed eyes, and cough, like measles. The spots may continue from three to

ten days; they disappear without desquamation. Occasionally a second eruption occurs after the first has gone off.

In some rare cases, the rosy spots assume an annular shape, the central parts retaining the natural color of the skin.

Roseola occurs most frequently in women and children, and is not contagious. It occasionally prevails epidemically, and sometimes precedes the eruption of small-pox, or it follows the vaccine affection. Dentition, and a draught of cold water when the body is heated by exercise, may give rise to this eruption; and it is often associated with gastric disorder, particularly in children.

Measles and scarlet fever are the affections with which roseola is most liable to be confounded. The more distinct catarrhal character of measles, the irregular semi-lunar grouping of its *small* red points, and the vivid redness of its eruption; contrasted with the larger, more circular, well defined, and *rose* red spots of roseola, will generally enable us, without difficulty, to form a correct diagnosis. The small vesicular elevations, the irregularly diffused *raspberry* efflorescence, and the tumefaction of *scarlatina*, are usually sufficient to distinguish this affection from *roseola*. Roseola is not contagious; measles and scarlatina are.

This disease is almost always wholly free from danger.

*Treatment.*—Rest, mild aperients, acidulated cooling diluents, a simple and unirritating diet, an equable and moderate temperature. Diaphoretics, are, in general, all that is required in the treatment of this affection. When internal inflammations occur, a more vigorous and appropriate course will be demanded.

## SCALLED HEAD.

THIS disease consists in a chronic inflammation of the skin of the head, productive of a secretion of matter, peculiar in its nature, and capable of propagating the complaint, if applied to the scalp of a healthy subject. At first the eruption is confined, probably, to only a small portion of the head; but by degrees its acrimony is extended to the neighboring parts, and at length the whole of the scalp is eroded, and beset with a scabby eruption.

Children are principally affected with it, particularly those of the poor; hence it evidently arises from uncleanness, from the want of a due proportion of wholesome nutritive food, and possibly from bad nursing. At any rate these will very much aggravate the disease. In many instances it is propagated by contagion, either by using a comb imbued with the matter from the head of a person laboring under it, or by putting on his hat or cap.

When proper means are adopted the disease seldom proves difficult of cure.

*Treatment.*—The yellow dock applied at night in the form of a poultice, will seldom fail in performing a radical cure.

## IPSORA, OR THE ITCH.

THE itch is evidently confined to the skin, and rarely affects the general system, however great its irritation.

It arises most usually from infection communicated by coming into immediate contact with the body of a person already affected, or by wearing the same clothes, or lying in the same bed-linen that he has done; but it is sometimes produced by unwholesome food, bad air, and a neglect of cleanliness. Those who reside in a cold mountainous situation seem particularly predisposed to it: hence these united causes make it a disease of very frequent occurrence among the Highlanders of Scotland.

The itch shows itself in small pimples about the fingers, wrists, hams, and waist, which after a short time become so many pustules, and are attended with such an itching as to occasion a constant desire to scratch. When they break, the acrid fluid which they contained falls on the neighboring parts, and thereby spreads the disease over almost the whole body, if proper remedies are not used to check its progress. Where the pustules are very large, and attended with much inflammation, they are apt to run into boils. The animalcules which are seen in the pustules are the effect, not the cause of them: as all other stagnating fluids abound with microscopic animals.

*Treatment.*—Any of the preparations of the dock, either a tincture, infusion, or ointment, will prove a salutary prescription in the itch.—The third preparation, blood-root, and vinegar are known to possess great merit as local applications, in the cure of this complaint. The bowels should be kept open by mild aperients.

## PERNIO, OR CHILBLAIN.

CHILBLAINS are painful inflammatory swellings, of a deep purple or leaden color, to which the fingers, toes, heels, and other extreme parts of the body are subject on being exposed to a severe degree of cold. The pain is not constant, but rather pungent and shooting at particular times, and an insupportable itching attends. In some instances the skin remains entire, but in others it breaks and discharges a thin fluid. When the degree of cold has been very great, or the application long continued, the parts affected are apt to mortify and slough off, leaving a foul, ill-conditioned ulcer behind.

Children and old people are more liable to be troubled with chilblains than those of a middle age; and such as are of a scorfulous habit are remarked to suffer severely from them.

The best mode of preventing these affections is to avoid with much care any exposure to wet or cold; wherefore those who are subject to them should be cautious, on the approach of winter, to cover the parts which are apt to be injured with woollen gloves and stockings, and not

expose the hands or feet too precipitately, when cold, to a considerable degree of heat.

*Treatment.*—The repeated application of third preparation, or No. 6, will frequently cure this malady.

## WORMS.

THE human body is infested with three kinds of worms, viz. the ascarides, or small white worm ; the teres, or round worm ; and the tænia, or tape-worm, which is flat, consists of many joints, and is usually of a considerable length. The last is, however, more rarely met with in this country than the others ; but in Germany and Switzerland the inhabitants are much troubled with it. Different situations of the intestines have been mentioned as being occupied by each kind, particularly the rectum as the seat of the ascarides, where they are observed always involved in mucus ; the teres occupy the small intestines, and sometimes the stomach ; the tænia the whole intestinal tube, more especially the ilium.

Unwholesome food, with a bad digestion, seems to be the principal cause of worms. They appear most frequently in those of a relaxed habit, and whose bowels contain a preternatural quantity of mucus or slimy matter. Hence it is a disease most common to children ; but they sometimes prevail in adults to a very high degree, particularly in those who live chiefly on a vegetable diet. The tape-worm is not often met with in infancy or childhood ; instances of it do, however, now and then occur. Some physicians entertain the opinion that intestinal worms do not arise from a weak or impaired digestion, and a consequent combination of matter capable of converting itself into such worms, but that they are introduced into the human body mixed with the food or drink, and find in the intestines an appropriate place for their existence.

Worms may readily be distinguished by the following symptoms, viz. variable appetite, fetid breath, acid eructations, and pains in the stomach, grinding of the teeth during sleep, picking of the nose, paleness of countenance, hardness and fullness of the belly, slimy stools, with occasional griping pains, more particularly about the navel, heat and itching about the anus, short dry cough, emaciation of the body, slow fever, with evening exacerbations, and irregular pulse, and sometimes convulsive fits.

It is often a very difficult matter to expel worms from the body, but more especially the tænia. When they prove fatal, it is by their erosion of particular parts, and their inducing a tabid state.

*Treatment.*—In the cure of this disease we must have in view, first, the effecting the destruction and discharge of the worms ; and, secondly, the preventing their future generation.

The following compound will rarely disappoint the expectation of relief, by those who will give it a trial ; indeed the worst forms of the



complaint, attended with repeated convulsions have often been known to subside immediately on its administration.

*Recipe.*—Poplar bark, one pound ; scunk cabbage unicorn and ginger, each one ounce ; butter-nut bark, three ounces ; boil in two gallons of water to two quarts, and add one half gallon of molasses, and one ounce oil of wintergreen, which should first be put to one pint of alcohol. During convulsions, a large tea-spoonful of this syrup may be given every ten minutes until relief is obtained.

It may always be given according to the urgency of the symptoms with perfect safety and certainty.

Worm seed as a vermifuge (either the oil or substance) has been long known and extensively used. Where these offending animals are situated in the lower part of the intestinal tube ; some service may result in repeated injections of composition, cayenne, or No. 6. If this treatment does not prove sufficiently laxative, the bitter-root and cayenne, or the butter-nut syrup should be advised.

It may be necessary where constitutional debility has existed to give several courses of medicine, followed by the bitter tonics.

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## POISONS.

Poisons are of four kinds—mineral, vegetable, aerial, and animal. Mineral poisons are to be distinguished from vegetable ones by their action. The former corrode, stimulate, or inflame ; the latter generally stupify, and leave no marks of inflammation. None of the mineral poisons terminate life, till after a most excruciating operation of two or three hours at least ; whereas some of the vegetable class destroy it in a few minutes, (Prussic acid.) From the animal poisons the distinction is a striking ; for although in the plague the mouth and throat are frequently affected in the same way, yet the local disease of the stomach is never present. The aerial poisons operate still more quickly than any of the other classes, and their action on respiration is so peculiar, that it can never be mistaken.

## MINERAL POISONS.

THE chief of the mineral poisons are lead, nitrate of silver, tartarized antimony, acids, alkalies, arsenic, and some of the preparations of mercury. Most of the latter are active medicines, and when given in improper doses, several prove violent poisons, such as the nitrous oxyd of mercury, the red oxyd, and calomel.

The effects of lead when introduced into the stomach and bowels, are languor, tremors, cholic, palsy, convulsions, and death, as already noticed under the heads of Colica Pictonum and Palsy.

An overdose of tartarized antimony sometimes occasions death, producing at first violent vomiting, a languid and almost imperceptible pulse, coldness of the extremities, insensibility and not frequently convulsions.

Where arsenic has been administered, or taken perhaps in a mistake for some other medicine of a similar color and appearance, a pricking and burning sensation will soon be experienced in the stomach, sudden and excruciating pains will be felt in the bowels, a severe vomiting will arise, the tongue, mouth, and throat will become rough and parched, and an unquenchable thirst will prevail, with much anxiety and restlessness. If the dose has been considerable, and the poison not quickly evacuated from the stomach, or proper antidotes have not been employed in time, an inflammation of the alimentary tube will be the consequence, which will soon terminate in gangrene, giving rise to much distention of the abdomen, coldness of the extremities, fetid vomiting and stools, hiccoughs, and lastly, the death of the person.

A case reported in the 5th volume of the Medical and Physical Journal, p. 543, shows, that arsenic, as well as some other metallic poisons, may be taken into the system by the absorbents, and thereby produce very baneful effects on the constitution.

There are two theories entertained with respect to the mode in which arsenic operates: the one is, that its deleterious properties are owing to the action of its sharp spiculæ on the stomach; the other, that it has a peculiar action on the nervous system. Neither of these seems, however, to be true to the extent meant to be inculcated.

The effects produced by swallowing oxymuriate of mercury in a considerable dose, are pretty similar to those occasioned by arsenic. It produces sickness, severe griping pains in the stomach and bowels, excessive vomiting and purging of frothy mucus, sometimes mixed with blood, distention of the belly, suppression of urine, coppery taste and heat in the mouth and throat, great thirst, cold sweats, anxiety, and death. When the patient survives the immediate agency of this poison, he is not unfrequently affected with sloughing of the mouth and gums, fetid breath, salivation, and extreme debility.

The red precipitate and red oxyd of mercury produce violent purging and vomiting, pains in the stomach and bowels, and other very distressing effects.

From all poisons of the mineral class, more or less danger is always to be apprehended; but the degree will ever be in proportion to the

quantity which has been swallowed, and to the time which has elapsed previous to any assistance being given.

Dissections of those who have died in consequence of any mineral poison, such as arsenic, or the oxymuriate of mercury, show that the alterations of structure occasioned by them are, that the mouth, stomach, and intestines are usually inflamed; that the stomach and duodenum sometimes present gangrenous spots, eschars, and perforations of their coats; that the villous coat of the stomach now and then appears as if destroyed, and reduced to a state of reddish brown dough: finally, that all the other viscera are more or less inflamed. It is said that arsenic produces a resistance to putrefaction, as some bodies, which have been examined many days after the persons had been poisoned, discover neither putrescence nor fœtor.

When an animal is killed by arsenic or the oxymuriate (corrosive sublimate) of mercury taken internally, the stomach is usually found to bear marks of inflammation, as has just been observed; and it is a very general opinion that this inflammation is the cause of death, and that it is the consequence of the actual contact of the arsenic with the internal coat of the stomach; but we are told by Mr. Brodie, that, as a general proposition, the first of these opinions is incorrect, as he has found in several cases the inflammation of the stomach so slight, that on a superficial observation it might have been easily overlooked; and that in most of his experiments with the poison of arsenic, death has taken place in too short a time for it to be considered as the result of inflammation. He is of opinion that vegetable substances, when applied to wounded surfaces, affect the system by passing into the circulation through the divided veins: and he thinks that arsenic, in whatever way it is administered, does not produce its effects on the stomach until it is carried into the blood. In short, that the symptoms produced by arsenic may be referred to the influence of the poison on the nervous system, the heart, and alimentary canal.

## VEGETABLE POISONS.

THE vegetable poisons are very numerous, and consist of two classes, the narcotic or stupifying, and the irritant or stimulant. Opium, hyoscyamus, belladonna, digitalis, hemlock, stramonium, aconitum, laurel, cassava-root in its crude state, and several fungi, particularly the small agaric, (denominated by the French champignon, and somewhat resembling mushrooms,) belong to the first class; whereas, colchicum autumnale, hellebore, savin, and cocculus indicus, come under the latter class. Those of the first occasion stupor, sleep, and death, and occasionally vomiting, purging, and convulsions; those of the latter class produce pain, inflammation, and erosion.

Many of the former, and particularly the champignons, are often taken through mistake, and prove poisonous. The same happens frequently in the West Indies from using the cassava-root in its crude or unprepared state. In this state it proves a deadly poison; but by having its acrimonious juice carefully expressed, and being afterwards baked into thin cakes, it becomes a wholesome and nutritive bread, much used in most of the islands, as also in Africa. Such is the wonderful effect produced by fire over this plant.

The following are the indications by which the mushroom tribe that are of a suspected nature may be distinguished. All those may be regarded as suspicious and of a dangerous quality which grow in marshy shaded places, as thick forests, where the sun has no access; their substance is softer, more open, more porous, and moister than edible mushrooms. They have, besides, a more disagreeable appearance, and a more or less humid and dirty-looking surface. Those also which are dusky and change color when cut, or which exhale a strong unpleasant odor, or have a gaudy color, or many very distinct hues, particularly if they have been originally covered by an envelope, and are found in shady places, ought not to be eaten. Those which have short bulbous stalks, or fragments of skin adhering to their surface, or which grow rapidly and corrupt very quickly, should also be rejected. It has generally been supposed that fungi lose their deleterious properties by being dried; but this is a rule to which there are many exceptions, and which ought therefore to be very cautiously admitted.

The symptoms occasioned by all poisonous substances of the vegetable class are, giddiness, confusion of sight, wildness of the eyes, palpitations, loss of memory and voice, stupor, nausea, vomiting, great distention of the stomach, universal twichings, and convulsions.

The bodies of those who have been destroyed by vegetable poisons generally swell prodigiously, soon become offensive, and covered with livid gangrenous spots. On opening the body, the viscera are usually found in a sound state, but the veins are full and distended, the blood remarkably fluid, and the arteries empty. When nightshade has occasioned death, the intestines are generally inflated and inflamed, or corroded and gangrenous.



## AERIAL POISONS.

AERIAL POISONS are frequently the cause of death, but more frequently by accident than design.

The fumes arising from many of the metals in a state of fusion or aerial solution are extremely pernicious. Those from arsenic cause dryness of the tongue, a sense of suffocation, headache, vomiting, &c., and by long exposure, pulmonary consumption is a frequent consequence. The fumes from mercury are highly deleterious : they occasion salivation, tremors, paralysis, and extreme weakness. Those arising from lead occasion asthma, pains in the chest and body, paralysis, &c.

The external appearances of persons suffocated by the deleterious fumes arising from charcoal, coke, or fermenting liquors (carbonic acid gas,) as well as in consequence of sleeping in unventilated apartments, or respiring the foul air of wells, privies, caverns, and mines, are as follow : the head, face, and neck are swollen ; the eyes are propelled from their sockets ; the tongue is protruded at one side of the mouth ; the jaws are firmly closed ; the face is of a livid, and the lips are of a deep blue color ; the abdomen is inflated ; the body is insensible to pain, and the person appears to be in a profound sleep.

The first symptoms which the patient experiences on inhaling air vitiated with these deleterious fumes are, giddiness, headache, lethergy, fainting, convulsions, and general torpor.

Pits, wells, deep vaults, &c. should never be entered immediately after they are opened. It will be a good precaution first to let down a lighted torch or candle, for where these will not burn, animal life cannot long be sustained.

## ANIMAL POISONS.

SEVERAL of these have already been mentioned, and their mode of operation noticed, under the heads of Hydrophobia, Syphilis, Cancer, and Contagion. It only therefore remains to treat of the poison of prussic acid, venomous snakes, the viper, and some peculiar kinds of fish, the last of which in warm climates is frequently attended with fatal consequences.

Prussic acid being artificially obtained by the decomposition of animal substances, is generally deemed an animal acid, but it exists in a natural state in bitter almonds, the kernels of apricots, the leaves of laurel and peach blossoms, from whence it may be extracted by distillation. It has a sweet taste, smells like bitter almonds, and is highly poisonous ; producing the same effects on the animal system as laurel water, such as convulsions resembling epilepsy, paralysis and death.

The symptoms which attend on the introduction of the poison of the rattle-snake into the blood are : nausea ; a full, strong, agitated pulse ; swelling of the whole body ; eyes much suffused with blood ; some-

times copious bloody sweats ; and often hæmorrhages from the eyes, nose and ears ; the teeth chatter ; and the pains and groans of the sufferer indicate approaching dissolution.

The poison of this reptile is generally of a yellowish, somewhat greenish color, which becomes darker in hot weather. During the coupling season it is observed to be more active or virulent than at any other. So deadly are its effects, that it has been known to kill a dog in a few minutes.

Poisonous serpents are best distinguished from those that are innocuous, by an accurate inspection of their teeth ; the poisonous ones, or fangs, being usually of a tubular structure, and furnished with a small hole or slit near the tip : they are rooted into a particular bone, so jointed to the rest of the jaw on each side as to permit the fangs to be raised or depressed at the pleasure of the animal. Above the root of each is a glandular reservoir of poisonous matter, which, in the act of biting, is pressed into the tube, and discharged into the wound through the hole near the tip. In general, the fangs are single on each side, but sometimes they are double and even triple. There are usually small or young fangs, situated at the base of the larger ones, ready to grow up and supply the place of any which may be lost by accident or violence. It may be said, that innocent serpents have four rows of teeth in the upper jaw, two on the palate, and the rest on each side ; but that poisonous serpents have no outward or side teeth but the fangs. Dr. Russel tells us, that in serpents not venomous there are three rows of common teeth in the upper jaw ; in the poisonous kinds the external row is wanting.

The symptoms which attend on a bite of the viper are, acute pain in the wounded part, together with a considerable degree of swelling, that is at first red, but which afterwards becomes livid, and diffuses itself over the neighboring parts. After a short time the constitutional symptoms make their appearance ; the person becomes faint, the pulse is small and intermitting, nausea and vomiting ensue, the skin has a yellow tinge, and death not unfrequently is the consequence.

The *lytta vesicatoria*, or Spanish fly, is sometimes administered as a medicine, but when taken internally, either in tincture, infusion, or substance, except in very small doses, is apt to occasion very violent effects, as furor uterinus, involuntary emissions, strangury, bloody urine, violent pain, inflammation, ulceration of the stomach, bowels and bladder, tenesmus, delirium, convulsions, and death.

In this country some kinds of fish, such as eels, salmon, herrings, and in particular constitutions, muscels, lampreys, and even lobsters, independently of their putrescency, give a singular irritation to the system, and, during their digestion in the stomach, occasion a considerable afflorescence on the skin, sometimes partial, and at other times over the whole body ; sometimes with a considerable febrile disorder, and at other times with very little. In warm climates we however meet very frequently with fish possessed of the most deleterious quality. The sprat possesses a poisonous virus to an extent almost incredible, and has in several instances been known to destroy life in the space of half an hour by exciting dreadful convulsions. The conger

eel, as likewise the large white land-crabs, that feed on the leaves of the machineel-tree, are also frequently poisonous, and productive of violent cholera.

The cause of this deleterious quality in fish has given rise to various conjectures. Some are inclined to think there are two distinct varieties of the same fish; others impute it to copperasbanks on or near which the fish feed; and others again think that it proceeds from their particular food, which, although not hurtful to them, tinctures them nevertheless with a poison deadly to many other creatures. Of all these conclusions the last seems to be the best grounded, as it is an indisputable fact, attested in innumerable instances, that when the fish is removed off the hook, if the precaution is taken to gut it immediately and salt it, it seldom or never creates any disorder, or at most only in a slight degree, even if of ever so poisonous a nature.

Certain and rapid death is almost sure to ensue from eating the yellow-bill sprat; but from a use of most other kinds of poisonous fish the person is seized, after a few hours, with languor, heaviness, and faintness, succeeded by great restlessness, flushings in the face, giddiness in the head, cardialgia, nausea, griping pains in the bowels, and a severe vomiting and purging. The burning which was felt at first only in the face and eyes, is at length extended over the whole body, but more particularly the palms of the hands and soles of the feet, and is often succeeded by an eruption or efflorescence, rising up in large bumps similar to bug-bites, or the nettle-rash. The pulse is usually hard and frequent at first, but it soon becomes low and feeble. With the ardor of the skin there is invariably a prickly sensation in the hands when immersed in cold water, which particular symptom may always enable us to decide with confidence on the real nature of the disease.

In some cases, the neck of the bladder, urethra, and sphincter ani, are likewise affected with ardor, and the patient experiences a difficulty of making water, together with a considerable degree of tenesmus.

Where a large quantity of the poison has been taken, or it has been of so deadly a nature as to prove fatal, the patient generally goes off in strong convulsions; but where the quantity and nature of the poison have not been so powerful as to occasion death, and becomes emaciated, the cuticle peels off in various parts, but more particularly in the palms of the hands and soles of the feet; the hair drops, and acute shooting pains in the articulations of the wrists, knees, and ankles, and sometimes in the cylindrical bones, are felt for a considerable length of time. From the great debility which is induced, it not unfrequently happens that cedematous swellings of the lower extremities ensue.

The poison of fish is always attended with much immediate danger; and even when the person does escape its deadly consequence, his constitution not uncommonly receives so severe a shock, than in order to restore its wonted vigor, he will find it necessary to visit a cold climate. The necessity of this step I wofully experienced, and some years elapsed before the desired end was obtained.

*Treatment.*—The treatment of poisons whether animal, mineral or vegetable cannot essentially vary. The test of experience has afforded ample evidence that *lobelia* must be regarded as decidedly the most

powerful antidote to poisons, hitherto known to the profession ; and nothing but the blind and wilful prejudice, which has ever marked the opposition of the faculty to the Thomsonian remedies, has prevented the name, *lobelia*, being identified generally with relief throughout the land. Examples in the south are too numerous for quotation here, where lobelia has produced immediate resotation from the bite of the rattle-snake, moccasin, copper-head and other poisonous reptiles.

In all cases of poison, the strongest preparation of lobelia should be given with an unsparing hand ; and as soon as the vapor bath can be put in requisition, or the patient be placed in a situation to have it properly applied, thorough courses should be repeated ; and, too, at short intervals. Our perseverance is not to be relinquished until our patient is freed from danger. The practitioner need hardly be reminded, that under such circumstances, it will frequently require six or ten times the amount of an ordinary emetic to produce the desired operation. If the powers of the system are not so far destroyed as to prevent the operation of lobelia, relief may always be obtained. If the third preparation is not at hand, the patient should be liberally supplied with pepper-tea, or No. 6, in conjunction with the milder preparations of the emetic.

It is confidently said by the best authority, that common spirit will also cure the bite of the most venomous snake. The patient should be made to drink it by the tea-cupful every ten or fifteen minutes. Under such circumstances no danger whatever need be apprehended from the intoxicating effects of the liquor.

As intermediate treatment, particularly, of the mineral poisons, the white of the egg (albumen) is strongly recommended, as well as gum-arabic and slippery elm in solution, and other diluents. Where insensibility and stupor prevail to an alarming extent, and the patient cannot be made to swallow the largest doses of the third preparation, (an ordinary sized tea-cupful,) may be repeated at suitable intervals, with the syringe. In cases of extreme insensibility by the use of the narcotic, application of the ferule to the soles of the feet, by way of castigation, has been found very serviceable.

Contrary to the generally received opinion that vinegar or other acids are antidotes to the poison of opium, a series of experiments have resulted in the belief that they aggravate rather than diminish such symptoms by increasing its narcotic power.

The bowels should be kept open by the aid of laxative and sudorifics freely, and constantly advised.



## SUSPENDED ANIMATION AND RESUSCITATION.

In consequence of drowning, or a long exposure to the action of severe cold, and also a suffocation and strangulation, a considerable check is often given to the principle of life, without wholly extinguishing it. When it happens from the first of these causes, the circulation becomes gradually more feeble and slow, and much anxiety is felt about the præcordia; to relieve which the person attempts to rise to the surface of the water; he then discharges a quantity of air from the lungs, and receives into them a very small portion of water, when he again sinks. After struggling in this manner for some short time, convulsive spasms arise, the organs of respiration cease to act, and he at last expires; soon after which the skin becomes of a purple or blue cast, particularly about the face and neck, and the body sinks.

It has been supposed, and the opinion is indeed still very general among the common people, that in the act of drowning the water enters the lungs, and completely fills them. Experience, however, has shown, that unless the body lies so long in the water as to have its living principle entirely destroyed, the quantity of fluid present in the lungs is in considerable; for upon drowning kittens, puppies, &c. in ink, or other colored liquors, and afterwards examining these viscera, it has been observed that very little of the colored liquor has gained admittance to them. The circumstance may readily be accounted for, by recollecting that the muscles which form the opening into the trachea are exquisitely sensible, and contract violently upon the least irritation, as we frequently experience when any part of the food or drink happens to come in contact with them.

In those cases where a person has been long exposed to the action of cold in a severe degree, and is suffering from great numbness and a sort of intoxication, he is apt to fall quickly asleep, and becomes quite insensible. Occasionally he comes to himself without assistance, but more frequently he falls a sacrifice.

When a person dies from suffocation, the symptoms are nearly the same as in apoplexy.

The phenomena which attend on strangulation are, convulsive paroxysms, superadded to the apoplectic symptoms.

Livid and dark-brown spots on the face, with great rigidity and coldness of the body, a glassy appearance of the eyes, and a flaccid state of the skin, denote a perfect extinction of life: but the only certain sign is actual putrefaction; and therefore in every case where this symptom is not present, and where we are unacquainted with the length of time the body may have been under water, every possible means should be employed immediately upon its being found for restoring it to life; as the noble machine may be stopped, and the spring nevertheless still retain, in some degree, its elastic vigor.

Dissections of those who have died by drowning, show that an accumulation of blood in the venous system forms the great morbid change which takes place in accidents of this nature. The lungs are in a state of collapse, and the accumulation of blood is confined to the vena cava, the heart, and the parts of the venous system. In some cases the stomach

is found to contain a small quantity of water; in others, none is to be perceived. From the muscles of the trachea having lost the principle of life, upon which the power of muscular contraction depends, they become relaxed, the water enters the wind-pipe. In all instances, the external surface of the brain appears of a highly florid color, without any great distention of vessels, or marks of effusion. It has been supposed, however, by many, that persons who die by drowning, suffer from the intervention of apoplexy. After a recovery from apoplexy, the person is generally paralytic, whereas no such event follows the recovery from a suspension of life by drowning. In both hanging and drowning, the proximate cause appears to be the stoppage of air to the lungs, which the following experiment, made some years ago by an eminent medical professor at Edingburgh, clearly confirms. A dog was suspended by the neck with a cord, an opening having been previously made in the wind-pipe, below the place where the cord was applied, so as to admit air into the lungs. In this state he was allowed to hang three-quarters of an hour, during which time the circulation and breathing went on. He was then cut down, without appearing to have suffered much from the experiment. The cord was now shifted below the opening into the wind-pipe, so as to prevent the ingress of air to the lungs; and the animal being again suspended, he was completely dead in a few minutes.

The appearances exhibited on dissection, in cases of strangulation and suffocation, are pretty similar to those in drowning, except the absence of water in the lungs and stomach: and that in these instances there is always a greater turgesence in the vessels of the pia mater.

*Treatment.*—The following are the means to be employed for the recovery of persons recently drowned.

As soon as the body is taken out of the water, it is to be speedily conveyed in men's arms, or placed upon a door, or in a cart upon straw, if the distance is considerable, to the nearest house, where it is quickly to be stripped of the wet clothes; to be wiped perfectly dry: and then to be laid between warm blankets, spread upon a mattress, or a low table, and on the right side in preference to the left, in order that the passage of the blood from the heart may be favored by the position. The head is at the same time to be covered with a woolen cap, being properly elevated with pillows, and bags filled with warm sand, or bricks heated and wrapped in flannel, are to be applied to the feet. The doors and windows of the apartment are to be thrown open, in order that the cool air may be freely admitted, and no persons but such as are necessary to give due assistance, should be allowed to enter it.

Having taken these steps, we should next endeavor to expand the lungs, and make them, if possible, reassume their office. When not furnished with a flexible tube made of elastic gum, we must be content with blowing in air by inserting a common pipe into one nostril, compressing the other, shutting the person's mouth at the same time, and then blowing through the pipe with a considerable degree of force. By any of these means we may be able to inflate the lungs.

At the same time that the lungs are inflated, we should rub every part of the body with warm flannel cloths. On all occasions it will be the best way to divide the assistants into two sets; the one being employed

in endeavoring to restore the heat of the body; the other, in instituting an artificial breathing in the manner just pointed out. Should the frictions not be attended with any effect, we ought to apply flannel cloths, wrung out in very hot water, over the heart and thorax, or we may put the person into a warm bath. A high degree of heat will not be necessary; a moderate degree will be sufficient. If the weather be under the freezing point, and the body, when stripped, feel cold, and nearly in the same condition with one that is frozen, it will be necessary at first to rub it well with snow, or wash it with cold water; the sudden application of heat in such cases having been found very pernicious. In a short time, however, warmth must be gradually applied.

To assist in rousing the vital principle it will be necessary to apply No. 6, or a strong decoction of pepper to the different parts of the body with hot flannels. At the same time injections should be frequently given, composed of composition and cayenne, or No. 6, with a suitable quantity of warm water.

Hanging the patient by the heels, as is sometimes adopted by the ignorant, in cases of suspended animation from drowning, under the mistaken principle that this is induced by the water taken into the stomach and lungs, or both, is a most dangerous practice, calculated only to extinguish the spark of life, if any remained, and consequently to exclude every hope of recovery.

The means which have been advised are diligently to be persevered in for a considerable time, and the case by no means to be given up as irretrievably lost, until at least after the expiration of four or five hours' trial; as recoveries have been effected to this extent.

When the patient is so far recovered as to be able to swallow, he should be put into a warm bed, with his head and shoulders properly elevated with pillows. Warm wine whey, or any other light and nourishing drink, should now be given in moderate quantities at a time, and a gentle diaphoresis promoted by wrapping the feet and legs in flannels well wrung out of hot water. The patient should on no account be left alone until the senses are perfectly restored, and he is able to assist himself; some persons having relapsed and been lost, from the want of proper attention to them, after the vital functions were, to all appearance, tolerably established.

In cases where life is suspended by hanging, the same means recommended for drowned persons are to be pursued.

*Exposure to cold.*—The method of treatment to be adopted in cases of general torpor from an exposure to a severe degree of cold should be as follows:

The person should be removed with all speed to a convenient place where the necessary aid can be given. If the body is naked, it should be covered, leaving the head and face bare. If snow can be got, the body may be rubbed at first with it gently from the stomach to the extremities. In a few minutes afterwards the frictions may be made with cloths steeped in cold water, the temperature of which is to be increased, so as to heat the body gradually, and by slow degrees. The face may at the same time be sprinkled with water, the lips and nostrils be irritated with a feather and volatile alkali, or some such stimulant. As soon

as the body is restored to some degree of warmth, and the limbs become somewhat flexible, the person should be placed in a dry, but not warmed bed, and be well rubbed with flannels or a brush: his lungs may also be inflated; and an irritating clyster, composed of a pint of water, with an addition of a spoonful of pepper and a little of No. 6, be administered from time to time.

When the power of swallowing is restored, we should give the person some warm and gently stimulating drink, such as thin broth with a little brandy in it, or water with some wine, which may be administered by a spoonful at a time.

Before closing this subject it may be proper to observe, that in all cases of drowning, as well as in every other instance where death appears to be the consequence of apoplexy, syncope, lethargy, hysteria, or asphyxia, &c., we should be cautious not to allow the body to be interred until evident signs of decomposition or putrefaction are apparent; as the suspension of respiration, rigidity of the limbs, abolition of sensation and motion, the want of pulsation in the heart and arteries, coldness of the body, and the collapse, opacity, and want of lustre in the eyes, are but equivocal symptoms of death, and ought not therefore to be relied on alone.

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### FROST-BITTEN.

If a person has exposed his hands and feet to a very severe cold, the excitability of these parts will be so much accumulated, that if they are brought suddenly near a fire, a violent inflammation and even a mortification may take place, which has, indeed, often happened; or, at any rate, that inflammation called chilblain will be produced, from the violent action of the heat upon those parts; but if a person so circumstanced were to put his hands and feet into cold water, very little warmer than the atmosphere to which he had been exposed, or rub them with snow, which is not often colder than 33 degrees, the morbid excitability will gradually be exhausted, and no bad consequences will ensue. When the hands, feet, nose, or any other part of the body, have therefore been exposed to violent cold, so as to be frost-bitten, they ought at first either to be well rubbed with snow, or be put into cold water, and afterwards be subjected to warmth in the most gentle and gradual manner.



## DISEASES OF PREGNANCY.

THREE different stages evidently exist during a state of pregnancy, each of which has a distinct set of symptoms; and when we reflect on the alteration which the constitution suffers in consequence of impregnation, and the vast distension and dislodgment of the uterus which prevail at a more advanced period, we cannot be surprised at the many complaints and irregularities which then arise.

The first stage of pregnancy is usually accompanied with a suppression of the menses, together with frequent nausea and vomiting, heart-burn, indigestion, peculiar longings, headache, giddiness, toothache, and sometimes a slight cough; the breasts become enlarged, shooting pains extend through them, and the circle round the nipple alters to a dark brown color. There often occurs likewise a feverish disposition, with debility, emaciation, irritability, and peevishness of temper, and a total alteration of the countenance, every feature of which becomes much sharpened. Some women breed so easily as to experience hardly any kind of inconvenience whatever: whilst others again are perfectly incapable of retaining the least thing on their stomach, and are thereby reduced to a state of extreme weakness.

With some women the vomiting will continue during the whole or greater part of the second stage of pregnancy, as well as the first; but this does not usually happen. Partial suppressions of urine with a frequent inclination to void it; itching about the external parts of generation, costiveness, tenesmus, and the piles, are what they are chiefly incommoded by during this period. Most women quicken about the sixteenth week after conception, at which time the mother becomes sensible of the slightest efforts of the child; and besides the complaints just enumerated, she will then be liable to sudden faintings, and slight hysterical affections.

According to the common received opinion, quickening, so termed, has been generally understood to commence at the time when particular sensations are perceived by the mother, supposed to be occasioned by the first motion of the child. The most usual time of feeling any such symptoms is about the latter end of the fourth or beginning of the fifth month of pregnancy: at this period the uterus filling up the pelvis, slips out and rises above the rim; and from that sudden transition, women of a delicate constitution, and irritable fibre, are apt to faint, more particularly so if in an erect position.

During the last three months, or third stage of pregnancy, general uneasiness, restlessness, (particularly by night,) costiveness, oedematous swellings of the feet, ankles, and private parts, cramps in the legs and thighs, difficulty of retaining the urine for any length of time, varicose swellings of the veins of the belly and lower extremities, and the piles, are the affections which usually prove most troublesome. In weak delicate women, of an irritable habit, convulsive fits sometimes arise, which are ever to be regarded in a dangerous light.

*Nausea and vomiting.*—It has been observed that frequent nausea and vomiting are apt to prove somewhat troublesome to pregnant women, and in many cases to reduce them to a state of very great debility. As

these most frequently arise immediately upon first getting out of bed in the morning, the patient should be recommended, under such circumstances, never to rise until she has taken either a dish of tea, coffee, or whatever else she has usually accustomed herself to for breakfast.

Composition and nerve powder to keep up a perspiration; or if these fail to allay the excitability of the stomach, lobelia in small doses may be given, or full and light courses of medicine repeated at proper intervals.

It sometimes happens that vomiting is incessant for many days together, accompanied with great prostration of strength and constant thirst, and at the same time an utter impossibility of retaining any thing on the stomach. In this state a protracted course of medicine will seldom fail to produce relief.

*Toothache.*—For the alleviation of the toothache, the external as well as internal application of a few drops of the oil of cloves, cajeput, juniper, or any other essential oil, will often prove effectual.

*Heartburn.*—If the patient is incommoded by heartburn (which usually proceeds from an acidity in the stomach,) half a drachm of magnesia may be taken morning and evening to obviate it; or the following compound: Take magnesia, a large table-spoonful, subcarbonate of soda one half tea-spoonful, essence of cinnamon, table-spoonful, pure water, eight ounces. Mix them, and take two or three table-spoonfuls as the occasion may require.

*Longings.*—When particular longings arise in a state of pregnancy, they should, if possible, always be gratified, as women are apt to miscarry from the anxiety they occasion when not indulged, as well as to convey some deformity or malformation to the offspring, by this unaccountable morbid appetite.

*Hysteria.*—Should any hysterical affection or sudden fainting arise, little more will be necessary than to expose the patient to a free open air, to place her in a horizontal position; and to give her a glass of cold water with a few drops of No. 6, or a little wine sufficiently diluted.

*Costiveness, Piles, &c.*—Costiveness, partial suppressions of urine, and the piles, which attend on the second stage of pregnancy, are occasioned by the great pressure of the uterus on the rectum and bladder. The first and last of these symptoms are to be obviated by a daily use of some gentle laxative, or the syringe. In troublesome piles externally seated, the best application is No. 6, and a strong decoction of the vegetable astringents.

*Diarrhœa.*—If diarrhœa arises in pregnant women, it should be treated just as at any other time, (see this disease;) and after the stomach and intestines are cleared, astringents may be used, if there is no great degree of fever. If fever is present, that must be attended to chiefly, and be first removed by the ordinary process.

*Suppression of urine.*—When a suppression of urine takes place, which is apt to happen in the advanced stage of pregnancy, besides making use of emollient fomentations, elysters, and gentle purgative medicines, the patient drinking plentifully at the same time of diluent liquors, it will be necessary to have recourse to frequent lobelia injections and light courses of medicine.

*Retroverted uterus.*—It sometimes happens that a retroversion of the uterus ensues, in which case it becomes misplaced downwards and backwards, because the os uteri is tied forwards to the meatus urinarius, and there is no communication behind by which it is held to the rectum; but anteriorly it is connected with the neck of the bladder by close cellular substance; therefore whatever raises the bladder will raise the cervix uteri, and what raises this must at the same time depress the fundus: so that in a retroversion of the uterus, the urethra is drawn up close behind the symphysis pubis; and in the case now under consideration, the bladder rises and draws up the os uteri with it.

The only period of pregnancy at which a retroversion of the uterus is apt to arise is between the end of the third and fourth months; for in the early months of pregnancy the uterus in length from the fundus to the cervix is not so great as to fill the space between the sacrum and the neck of the bladder, and cannot for that reason produce suppression. This applies to all situations of the uterus in unimpregnated women, and women who are with child, till the close of the fourth month of pregnancy; after which, the uterus cannot be made to go down in the pelvis.—When the uterus has once fairly ascended into the abdomen, it is impossible for it again to return into the pelvis until its volume has been diminished by delivery or abortion.

In most of these cases the suppression of urine is the only material object to be attended to; for the uterus being retroverted, the woman cannot make water; therefore it must be drawn off by the catheter. If necessary, this operation is to be repeated twice a day till the uterus, by a gradual enlargement, recovers its natural situation, which will be preferable to any interference of the attendant to reduce it. Where it is impossible for him to attend twice a day for the purpose of drawing off the water, the reduction may possibly be effected by the patient placing herself on her hands and knees, and then passing two fingers of one hand into the vagina, and a finger of the other into the rectum, by which means it is possible sometimes to succeed. Where the event is left to time, the uterus is sure to recover its proper situation; for which reason it is preferable to leave it.

In passing the catheter in cases of retroverted uterus, it will be necessary to attend to its curve, which curve is given by holding the instrument in one hand, and pressing the thumb on the other hand on one side, while it is gently drawn through the hand. The point of the catheter must be dexterously introduced close behind the pubes; for if some dexterity is not used it frequently will not pass into the bladder.

*Troublesome itchings.*—Where a severe itching about the parts of generation attends on pregnancy, it will be proper to keep the woman's body perfectly open with some mild aperient, and to wash the parts three or four times a day with cold water.

*Edematous swellings.*—The swellings of the feet, ankles, and private parts, which arise in the last stage of pregnancy, are occasioned by the pressure made by the womb, which now prevents the free return of the blood from the lower extremities. Gravid women are usually free from these complaints in the morning, but towards night they frequently suffer much from them.

Flannels wrung out in an infusion of emollient herbs; frequent steamings; and the applications of dry flannel frictions should be directed; and a recumbent posture and quietude particularly enjoined.

*Cramps.*—Cramps of the thighs and legs are to be relieved by the best linaments, frictions, by wearing the stockings in bed, by frequent steamings and courses. In such cases the patient must carefully avoid every kind of food that is apt to prove flatulent or hard of digestion, and she must keep her body perfectly open.

*Inability of sleeping and restlessness.*—Inquietude and inability to sleep prove troublesome complaints towards the latter period of pregnancy; the patient being obliged to rise frequently throughout the course of the night, in order to expose herself to the influence of cool air. Nothing affords so great relief in cases of this nature as the vapor bath just before going to bed, accompanied by composition and nervine.

*Varicose veins.*—The veins of the legs, thighs, and belly often become varicose in the last stage of pregnancy, and sometimes put on an alarming appearance from their great enlargement and distension. No bad consequences have, however, been observed to attend such a condition; and the only thing necessary to be done, is to empty the vascular system by moderate courses of medicine, gentle aperients, and a spare diet.—Should the vein of any particular part become so distended as to prove troublesome, it may be advisable to apply a bandage of a moderate tightness, so as to give the necessary support to it.

*Jaundice.*—In some instances the woman is affected with a pain in her side, and excessive sickness at the stomach, and retchings, the skin assuming a deep yellow color. It is only under these circumstances that the complaint proves distressing, and it is usually occasioned by the formation of one or more gall-stones, and the obstruction which they oppose to the usual and regular passage of the bile. The means most conducive to relieve the woman from this degree of the complaint are, warm fomentations to the painful parts, and frequent steamings, full and effectual courses.

Jaundice, or any other bilious affection prevailing during a state of pregnancy from the pressure of the uterus on the gall-bladder or ducts, is to be obviated by keeping the body open with some gentle laxatives.

*Incontinency of urine.*—This is a very disagreeable complaint, and it keeps the woman constantly in an uncomfortable state. It is to be removed only by delivery, but may be moderated by a frequent horizontal posture. Its bad effects may be prevented by a scrupulous attention to cleanliness, and the use of a thick compress of linen, or a sponge of considerable size, properly fastened.

*Over-distension of the abdominal skin.*—In the latter months of pregnancy the integuments of the abdomen will sometimes become cracked and sore, the skin seeming to suffer from over-distension. In this case nothing is so effectual as a frequent use of warm oil by friction, and to give it somewhat of a medicated appearance a little camphor may be added.



## CONVULSIONS

CONVULSIONS may occur either during pregnancy or labor, and are of different kinds, requiring opposite treatment. One species is the consequence of great exhaustion from a tedious labor, excessive fatigue, or profuse hæmorrhage. This makes its attack without much warning, and generally alternates with fainting, or great feeling of depression of strength and debility; the muscles about the face and chest are chiefly affected, and the pulse is small, frequent, and compressible, the face pale, the eyes sunk, and extremities cold. The fits succeed each other pretty quickly, and very soon terminates in a fatal syncope.

In all cases of this nature, it should be our object to check the further operation of the exciting cause, by restraining hæmorrhage if present, or preventing every kind of exertion, and thus husband the strength which remains, or recruit it by cordials—liberal doses of pepper tea, will be of infinite service.

Hysterical convulsions are more common during gestation than during labor. Here it may therefore only be necessary to add to what has already been said under the head of Hysteria, that if they do not speedily yield to composition and No. 6, a course of medicine must be resorted to.

The species of puerperal convulsions most generally met with bears some likeness to epileptic fits; and it is only by being aware of the different degrees of violence attending each, that at first sight we can distinguish them. A fit of puerperal convulsion is much more severe than one of epilepsy, and a paroxysm of the former is usually so violent, that a woman, who when in health was by no means strong, has been so convulsed as to shake the whole room, and to resist the coercive powers of many attendants. No force indeed can restrain a woman when in these convulsions. The distortion of her countenance is beyond conception; in regard to deformity of countenance, nothing bears resemblance to the progress of this disease; the rapidity with which the eyes open and shut, and the sudden twirlings of the mouth, are inconceivable and frightful.

Puerperal convulsions seldom happen before the sixth month, but may occur at any time between this period and the completion of labor. They may arise as the first symptom of labor, or after the labor is finished. This species of convulsion depends on the state of the uterus, and has been observed to arise oftener during the first pregnancy than in any after one, particularly where the woman is unmarried.

The characteristics of puerperal convulsions are as follows: The paroxysms occur periodically like labor pains, so that there is a considerable space between them at first, but afterwards they become more frequent. They not only occur with the labor pains, but in the intervals between; and whether there have been labor pains or not before they come on, we shall usually find the os uteri somewhat dilated, and it is sure to become still more so from the continuance of these convulsions. At length, if the woman is not relieved, and the convulsions continue without destroying life, the child is actually expelled by the contraction of the uterus, which power is capable of expelling it even after death.

The immediate symptoms are somewhat similar to those of the epileptic paroxysm. The woman suddenly loses all sensation, and stretches herself out; the muscles then become extremely rigid, and are speedily afterwards thrown into violent convulsions, the face is distorted, the eyes are protruded, she gnashes her teeth, and foams at the mouth.—After the paroxysm is over, she remains in a comatose state, and has stertorous breathing, similar to what takes place in apoplexy. At length, except in very aggravated cases, she slowly comes to herself, but without being conscious that she had been in a fit. After a longer or shorter interval a fresh attack takes place in the manner just described, for it rarely happens that there is not a repetition of the paroxysm in all cases of true puerperal convulsion. During the fit the skin becomes dark and purple, proving that the circulation through the lungs is not free, which purple color leaves the woman after the fit is over. By the introduction of the hand into the uterus when these convulsions have come on, it has been ascertained that this organ is contracted, but with a tremulous undetermined sort of force, perfectly different from what takes place at any other time.

There are two cases of puerperal convulsion which are very distinct: one is a convulsion dependent on an irritable or excitable state of the nervous system; the other on a fulness of the vessels of the brain, or perhaps a slight extravasation from the vessels thereof. In a woman strongly disposed to this complaint from such a cause there will be a sense of great fulness in the head, giddiness in the advanced periods of pregnancy, drowsiness, and a sensation of weight when she stoops forward, imperfect vision, and atoms floating before her eyes. These symptoms strongly denote fulness of the vessels of the head, and if allowed to continue, may lead to extravasation or puerperal convulsion; but if early attended to may be removed, and premature labor prevented.

*Treatment.*—Frequent and protracted courses of medicine, the composition and broken doses of lobelia should be given daily—frequent steamings—the bowels duly liberated by the aid of aperients and the syringe.

## ABORTIONS.

By abortion is to be understood the expulsion of the contents of the gravid uterus at a period of gestation so early as to render it impossible for the fœtus to live. It is an accident or disease of frequent occurrence, which is always attended with disagreeable circumstances; and which, although it seldom proves immediately fatal, may still be productive of much mischief at a future period.

Abortions may happen at any period of pregnancy, but they take place most frequently about the third or fourth month.

From the end of the third month to the period of quickening, there is a greater susceptibility in the uterus to have its action interrupted than either before or afterwards, which is the reason of more miscarriages happening at that time than at any other, and points out the necessity of redoubling our vigilance by watching and guarding against the operation of any of the causes from the tenth to the sixteenth week that may be likely to excite abortion.

When a woman happens to part with her burden before the seventh month, she is said to have miscarried or aborted: but when delivered of it after this time, the term labor is usually applied.

Children born at the end of the seventh month are seldom reared; and when they are, they usually prove small and weakly; but those of eight months are frequently preserved by bestowing proper care on them.

In consequence of an imperfect conception, it sometimes happens, that moles or substances of a fleshy nature (which upon being cut open contain not the smallest vestige of a child,) are formed in the uterus; and these at length becoming detached, give rise to a considerable degree of hæmorrhage.

As some women menstruate during the first months of pregnancy, it will be necessary to distinguish between an approaching miscarriage and a visitation of the menses, which may readily be done by inquiring whether or not the hæmorrhage has proceeded from any evident cause, and whether it flows gently or is accompanied with unusual pains.—The former generally arises from some fright, surprise, or accident, and does not flow gently and regularly, but bursts out of a sudden, and again stops all at once, and is also attended with severe pains in the back and bottom of the belly; whereas the latter is marked with no such occurrences.

Voluptuous women who are of a plethoric habit, as well as those who are of a weak and irritable frame, are most apt to miscarry; but accidents of this nature sometimes occur from a general defective constitution, or from a malconformation of the sexual organs.

The causes which give rise to floodings during a state of pregnancy are, violent exertions of strength, lifting some heavy weight, severe exercise, as dancing or much walking, the fatiguing dissipations of fashionable life, sudden surprises and frights, violent fits of passion, great uneasiness of mind, uncommon longings, partial spasmodic action about the os uteri, aloetic purges, profuse evacuations, excessive venery, former miscarriages, weakness in the parts immediately concerned, a

diseased state of the uterus, general debility of the system, external injuries, as blows and bruises, strong acrid medicines, such as savin and hellebore, which are often taken for the express purpose of exciting abortion and the death of the child.

A pregnant woman may be attacked with a flow of blood from the womb in consequence of any cause which is capable of separating a part of the ovum from the corresponding part of the uterus. The vessels which before passed straight from its internal surface into the membranes or placenta, and connected them together, now open, so as to allow the blood to escape between them, and to flow externally. This separation and consequent rupture may arise from any of the various causes just recited, but in a few instances it is occasioned by an implantation of a part of the placenta immediately over the os uteri, which cause is by far the most important, because it is the most dangerous, and the least likely to find a spontaneous remedy.

Abortions are sometimes induced by what is termed a retroversion of the uterus, in which the fundus uteri is retroverted and pressed down between the rectum and the vagina. This rarely occurs, however, beyond the first or second month of gestation, and is generally preceded by a difficulty in making water, and a consequent tumor of the bladder; a violent pain about the perinæum is thus caused, and a miscarriage is liable to follow.

Abortions are often preceded by a general sense of coldness, flaccidity of the breasts, slight pains in the loins and lower region of the belly, and sometimes with a slight febrile state of the system. In plethoric habits, and where abortion proceeds from over-action or hæmorrhagic action of the uterine vessels, the fever is idiopathic, and precedes the hæmorrhage. After a short continuance of these symptoms, a slight discharge of blood ensues, coming away sometimes in clots, and at others gushing out in a florid stream, then stopping perhaps for a short time, and again returning violently.

Sometimes nothing but coagulum can be perceived, that is so firm, and the globules and lymph so disposed as to make it assume, more especially if it has been retained for any time about the uterus or vagina, a streaked or fibrous appearance, which often gives rise to a supposition that it is an organized substance. When the contents of the uterus are expelled, a bloody discharge continues for a few hours, and is then succeeded by a serous fluid.

When the pregnancy is advanced beyond the third month, and abortion is likely to ensue, we have much bearing down, together with a derangement of the stomach, causing sickness and faintness, and we have likewise a most rapid discharge, owing to the increased size of the vessels. In this stage the membranes often give way, and the fœtus escapes with the liquor amnii, whilst the rest of the ovum is retained for some hours, or even days, when it is at length expelled with coagulated blood. In some instances the whole ovum comes away entire. After the expulsion the hæmorrhage ceases, and is succeeded by a discharge somewhat resembling the lochia.

With regard to the symptoms and duration of abortion, there is a great diversity in different instances. In some cases the pains are very



severe and long-continued; in others, short and trifling. Sometimes the hæmorrhage is profuse and alarming; at other times, although circumstances may not be apparently very different, it is moderate or inconsiderable. Often the sympathetic effects of the stomach and bowels are scarcely productive of inconvenience; whilst in the greater number of instances they are very prominent symptoms. As there is a diversity in the symptoms, so there is also in the duration of abortion; for, whilst a few hours in many, and not above three days in the majority of cases, is sufficient to complete the process, we meet with other instances in which it threatened for a long time, and possibly some weeks elapse before the expulsion takes place.

Floodings are more or less dangerous according to the state of pregnancy in which they happen. The farther a woman is advanced therein, the greater will be the risk, especially if unaccompanied by labor pains, as the mouths of the vessels which pour out the blood are much enlarged during the last stage of pregnancy, and of course a vast quantity will be discharged in a short space of time. Although miscarriages before the fifth month are seldom attended with immediate danger, the loss of blood being usually small, they nevertheless frequently lay the foundation of many grievous ailments by happening repeatedly. Some women are visited by habitual miscarriages, and observe a stated period for several successive pregnancies, which is more usually about the third month than at any other time.

The danger of abortion is to be estimated by considering the previous state of health and habit of the patient, and by attending to the violence of the discharge, the duration of the complaint, the difficulty of checking it, the disposition to expulsion which accompanies it, the period of gestation at which it is threatened, the frequency of its occurrence, and its combination with spasmodic affections or convulsions.

*Treatment.*—In all cases where there is a tendency to abortion, the patient should be guarded in her diet, exposures, and habits, avoid all agitations of mind, severe exercise, violent efforts, and such objects as may be likely to make a disagreeable impression on her.

She should take freely of composition, with an additional quantity of pepper added, and frequent light courses of medicine.

## DISEASES OF THE PUERPERAL STATE.

**PARTURITION**, it is well known, is a natural process, and cannot therefore be considered as a disease; but still it often lays the foundation of many distressing complaints, and is now and then attended suddenly even with fatal consequences.

On the separation of the placenta, and on the sudden removal of pressure on the expulsion of the uterine contents, every parturient woman encounters some degree of risk: the latter is indeed not unfrequently a source of danger, which has not been sufficiently insisted upon and practically attended to.

A woman sometimes appears safely put to bed after an easy and natural labor; she has suffered no unusual loss of blood on the separation and removal of the placenta; the uterus, on the application of the hand, is found well contracted, and the patient thus far at least appears in a fair way to do well: but notwithstanding these favorable appearances, and perhaps even during the congratulations of her friends upon the termination of her sufferings, she complains of a degree of faintness, attended with an inexpressible sensation of sinking: this is followed by restlessness, with an anxious depressed countenance, and occasionally by pain and a sense of constriction at the pit of the stomach; and expressions of alarm for approaching dissolution are not unfrequently repeated. Shortly afterwards the restlessness increases, the countenance becomes more dejected and ghastly, the pulse gradually sinks and fails in its stroke, the oppressive constriction on the epigastrium becomes intolerable, so as considerably to affect respiration; and if relief to these symptoms be not speedy, she becomes shortly a corpse.

That a woman may die suddenly from the rupture of a vessel in the brain, or in the thoracic or abdominal cavities, during the violent efforts of labor, is a conclusion sufficiently natural; but in accidents of this nature there would be symptoms of pressure on the sensorium in the one instance, and of internal hæmorrhage in the other; and the cause of death on inspection would be apparent.

At the commencement of faintness, we should have recourse to the exhibition of brandy, or No. 6, undiluted or diluted, according to the urgency of the symptoms and the rapidity of their progress, and in such quantity as may seem adequate to answer the intended purpose. That being attained, and the patient relieved, composition may be substituted. Moderate pressure upon the abdomen with the hand, or a bandage applied round the body, will assist the general intention; and the patient ought on no consideration, to be allowed to raise herself from the recumbent posture till she be so far recovered as to warrant security from the recurrence of the symptoms of alarm and danger.

*After-pains.*—Shortly after delivery these usually come on, and with some women prove remarkably severe. The quicker the labor has been, the slighter will they prove in general. Women with their first child are seldom much troubled with after-pains; but as the uterus is thought to contract less readily after each future labor, so they are more liable to suffer from them in any succeeding delivery than in the first.

When after-pains prove so troublesome as to deprive the patient of her rest, it will be necessary to have recourse to composition, No. 6, and nerve powder. Heated cloths or bladders filled with warm water may be applied as an external fomentation. These means are to be assisted by keeping up a sufficient pressure on the belly at the same time, by means of a broad bandage.

*Costiveness.*—This is apt to prevail after delivery, and should always be removed by a laxative clyster, or some gentle purgative.

*Flow of the lochia.*—In all women a certain degree of hæmorrhage usually takes place after delivery, produced by the removal of the placenta, which thereby lays bare the mouths of the blood-vessels in the inside of the uterus; and this commonly continues until the womb contracts to such a size as to close them up again. The discharge for the first four or five days consists usually of florid blood, after which time it assumes a mucous appearance, and so ceases gradually.

In weak and relaxed habits it sometimes happens, that instead of saturating a cloth now and then, as is natural to all women, the blood gushes out with such rapidity and violence as to run quickly through all the bed-clothes, and even to soak through the bed itself; in which case the patient will be reduced to a state of great debility if the hæmorrhage is not soon restrained. To effect this the free use of capsicum and composition as internal remedies, should be directed; and a silk handkerchief, or some soft cloth, thoroughly saturated in a warm decoction of oak bark and alum, may be introduced into the vagina.

Where a suppression of the lochia ensues before the accustomed period, the discharge ought again to be promoted, if possible, by plentiful dilution, and the application of warm fomentations to the parts. Should these means prove ineffectual, a course of medicine should be immediately given.

*The milk fever.*—About the third or fourth day after delivery, the breasts generally become turgid and painful, from the secretion of milk which then takes place in them. When this is moderate and free, no inconvenience will be experienced; but when copious, and accompanied by any obstruction in the lactiferous tubes in consequence of the use of some repellent application or of an exposure to cold, the breasts will then become hard, swelled, and painful, and a small fever will arise, accompanied by nausea, restlessness, pains in the head and back, and a considerable degree of thirst.

To prevent any consequences of this kind, it will always be advisable to apply the child to the breasts at a very early period after delivery. By delaying to do so immediately on the secretion of milk commencing, the breasts are not only apt to become much enlarged and distended, but the nipples are often so much retracted, that the child cannot lay hold of them without the greatest difficulty.

Where the mother's health will not admit of her suckling the child, or any other thing happens to prevent it, she should be careful to have her breasts drawn three or four times a day by some other person; and with the view of preventing a copious secretion of milk, she should use a very spare diet, keep her body perfectly open with laxative medicines, and abstain as much as possible from all liquids. This mode of proceed-

ing will be far preferable to the use of repellent applications to dry up, or put a stop to the secretion.

If any degree of fever arises, besides confining the patient to a spare diet, keeping her very quiet, and obviating costiveness by means of cooling laxatives, we may give her small and frequently repeated doses of lobelia and composition.

*Inflammation and tumors in the breasts.*—From exposure to cold, and neglecting to put the child at an early period to the breasts, or to get them drawn by some other person, accidents of this nature happen very frequently to lying-in women.

The third preparation as a discutient, and repeated courses of medicine, should be advised.

If the tumor proceeds to suppuration, notwithstanding we may have used every endeavor to prevent it, we should then assist the operations of nature by the application of emollient poultices and fomentations.—As soon as the suppuration is completed, the tumor should be opened, after which it may be dressed with dry lint, and a pledget spread with some kind of digestive ointment be laid over all. Should any fresh suppuration ensue, which not unfrequently happens, the same mode of treatment must be adopted; and that proper pus may be formed, the best tonic treatment must be advised.

*Excoriations of the nipples.*—From the constant state of moisture in which these parts are kept with those who give suck, such occurrences are very apt to happen. When excoriations do arise, the parts should be washed several times a day with a solution of the vegetable astringents.

To prevent the sore from being aggravated by sticking to the woman's clothes, a little cup made of wax may be laid over the nipple which is the part most apt to suffer. If only one nipple is affected, the child may be confined to the other; but if both are affected, and the pain occasioned by its sucking is too great to be borne, the woman must then desist from the duties of a mother until the excoriations are somewhat healed, taking care however to have her breasts drawn regularly twice or thrice a day.

*Miliary eruptions.*—In consequence of keeping women very warm, and of using a heating diet, it not unfrequently happens that miliary eruptions attended with some degree of fever, arise during a puerperal state. Sometimes they are dispersed over the whole body, but they are more usually observed about the neck and chest.

To conduct the patient with safety through the disease, the practitioner must have recourse to the means advised under the head of Miliary Fever. Should the eruptions strike in suddenly, No. 6, the composition and lobelia in broken doses will be proper.

Affections of this nature may, however, be avoided in general by an attention to diet, by keeping the patient's body perfectly open, and her bed lightly covered with clothes, and by admitting a proper and free ventilation through the chamber.

*Phlegmasia dolens puerperarum, or the painful intumescence of the lower extremity incident to lying-in women.*—The characteristic of phlegmasia dolens is a firm, glossy, warm, tense, elastic, painful, sudden



swelling, of a pale white color, which attacks the hypogastric region, the loins, nates, groin, labium, pudendi, thigh, leg, and foot of a lying-in woman some days after delivery, or miscarriage at an advanced period of pregnancy. Mr. White looks on the swelling of the labium pudendi as an invariable symptom of the disorder; and, he asserts, that when one limb only is affected the tumescence is confined so exactly to the labium pudendi of that side, that if a line were drawn from the navel to the anus, it would be found never to go beyond that line in the smallest degree.

Mr. White attributes the proximate cause of the disease in question to an obstruction, detention, and accumulation of lymph in the limb, and imagines the lymphatics to be obstructed as high up at least as where they enter the pelvis under Poupart's ligament, in consequence of some accident happening during labor, or some state peculiar to childbed. He conceives it might probably arise from the continued pressure of the lymphatic vessels by the head of the fœtus on the pelvis, which, he says, is often rough and sharp on its ridge, and might be followed by a rupture of these vessels in some part of their course.

Phlegmasia dolens generally takes place on one side only at first, and commonly begins in the hypogastric or inguinal region, or in the hip, or top of the thigh, and corresponding labium pudendi, preceded by rigors, and followed by pyrexia. In this case the patient perceives a sense of pain, weight, and stiffness in some of these parts, which are increased by every attempt to move the pelvis, or lower limb. If the part be carefully examined, it generally is found rather fuller or hotter than natural, and tender to the touch, but not discolored. After a little time the pain increases, always becomes severe, and in some cases is highly excruciating: it extends along the thigh, and at length the top of the labium pudendi becomes greatly swelled and distended; but on this happening, the pain is usually somewhat alleviated in these parts. It however extends down to the knee, and is generally most severe on the inside and back of the thigh. When it has continued for some time, the whole thigh becomes in its turn swelled, and the pain extending down to the leg and foot, these parts also swell; but on the swelling taking place, there is a considerable abatement of pain, and the woman does not experience much except she moves the limb.

The extremity being now swelled throughout its whole extent, appears perfectly or nearly uniform, and is not perceptibly lessened by a horizontal position like an œdematous limb. It is whiter than the natural color, is hotter than usual, excessively tense, and exquisitely tender when touched. When pressed by the finger in different parts, it is perceived to be elastic, little, if any, impression remaining, and that only for a short time. If a puncture is made into the limb, in some instances no fluid is discharged; in others, a small quantity of fluid escapes, which does not coagulate, but the whole of the effused matter cannot be drawn off in this way. The swelling of the limb varies both in degree, and in the space of time requisite for its full formation. In most instances, it arrives at double the natural size, and, in some cases, at a much greater. In lax habits, and in patients, whose legs have been very much affected with anasarca during pregnancy, the

swelling takes place more rapidly than in those who are differently circumstanced: it sometimes in the former class of patients arrives at its greatest extent in twenty-four hours, or less, from the first attack.

After some days, generally from two to eight, the febrile symptoms diminish, and the swelling, heat, tension, weight, and tenderness of the lower extremity, begin to abate, first about the upper part of the thigh or knee, and afterwards in the leg and foot. Some inequalities are found in the limb, which at first feel like indurated glands; but upon being more strictly examined, their edges are not so well defined at those of conglobate glands, and they appear to be occasioned by the effused matter being in different degrees of consistence in different points. The conglobate glands of the thigh and leg are sometimes felt distinctly, and are tender to the touch, but are seldom much enlarged; and as the swelling subsides, it has happened, that an enlargement of the lymphatic vessels in some part of the limb has been supposed to be felt.

The febrile symptoms having gradually disappeared, the pain and tenderness of the limb being much relieved, and the swelling and tension considerably diminished, the patient is much debilitated, and the extremities feel stiff, heavy, benumbed, and weak. It seldom, if ever, returns to its former size, but usually is considerably enlarged for the remainder of life, being always easily affected by cold than the other, and after exercise it will be more stiff and weak than the sound extremity. It sometimes happens, that after the disease abates in one limb, the other is attacked in a similar way, goes through the same stages, and continues much about the same time as the first.

Phlegmasia dolens is often slow in its progress and tedious in its cure; but it is rarely followed either by suppuration or gangrene; and still more rarely does it terminate fatally; the extravasated fluid being at length taken up, and returned into the circulation, although from the great distention of the limb there is usually much tenderness, pain, and a febrile disposition.

*Treatment.*—With respect to the treatment of phlegmasia dolens, much must be left to the discretion of the practitioner, who ought to prescribe according to circumstances. Should the disease be complicated with any other, such as phlegmon, erysipelas, anasarca, thoracic inflammation, puerperal fever, or peritonitis, then full and frequent courses which are ever to be adopted in all febrile indications; the daily use of the vapor bath; and to promote a gentle and constant determination to the surface of the body, small doses of lobelia and composition must be given. The patient must be confined to bed, be lightly covered with clothes, and her chamber kept ventilated.

When the inflammation has ceased, it may be advisable to make use of a stimulating liniment to the surface, accompanied by bandaging the limb slightly. We may also exhibit tonics internally.

To remove the affection of the system, and at the same time expedite the cure of the local complaint, we should endeavor to restore proper energy to the constitution, as well as improve the state of the blood; and this is to be effected by courses of medicine and a nutritious diet.

Our attention is next to be directed to the local treatment. When

the limb and labium pudendi are occupied by much pain, and any degree of inflammation, the parts may be well fomented with flannel cloths wrung out in hot vinegar, renewing these as often as they become cold. The simple means, unassisted by any other than merely keeping the bowels regular with gentle aperients, has been adopted in all cases of phlegmasia dolens with invariable success.

To drain off some of the fluid effused in the limb, it will be advisable in an early stage of the disease, to apply a blister to the calf of the leg, renewing the application from time to time in the neighborhood of the former, when it ceases to produce the desired effect. In some instances, coagulation quickly succeeds the effusion, and therefore neither scarifications nor punctures would be likely to prove beneficial.

Notwithstanding every attention, the complaint often leaves considerable weakness in the leg, requiring a laced stocking or roller applied round it from the bottom to the top, avoiding at the same time much standing or walking. To increase the action of the absorbents in the limb, frequent frictions with rubefacient liniments, or simply with the hand, flannel, or a flesh-brush, may be employed, the effects of which may be assisted by topical cold bathing.

*Hysteritis, or an inflammation of the uterus.*—In natural labors, as well as in those of a difficult sort, many causes of injury to the uterus and the peritonæum which covers it will be applied. The long-continued action of the uterus on the body of the child, and the great pressure made by its head on the soft parts, will further add to the chance of injury. Besides these, an improper application of instruments, or an officiousness of the midwife in hurrying the labor, or extracting the placenta, may have contributed to the violence. To these causes may be added exposure to cold, by taking the woman too early out of bed after delivery, and thereby throwing the circulating fluids upon the internal parts, putting a stop to the secretion of milk, or occasioning a suppression of the lochia.

An inflammation of the womb is sometimes perfectly distinct, but it is more frequently communicated to the peritonæum, Fallopian tubes, and ovaria : and having once begun, the natural functions of the organ become much disturbed, which event greatly adds to the disease.

It is oftener met with in women of a robust and plethoric habit than in those of lax fibres and a delicate constitution, particularly where they have indulged freely in food of a heating nature, and in a use of spiritous liquors. It never prevails as an epidemic, like puerperal fever, for which it has probably often been mistaken ; and to this we may, with some reason, ascribe the difference in the mode of treating the disease which has taken place among physicians.

An inflammation of the uterus shows itself usually about the second or third day after delivery, with a painful sensation at the bottom of the belly, which gradually increases in violence, without any kind of intermission. On examining externally the uterus appears much increased in size, is hard to the feel, and on making a pressure upon it, the patient experiences great soreness and pain.

Soon afterwards there ensues an increase of heat over the whole of the body, with pains in the head and back, extending into the groins,

rigors, considerable thirst, nausea, and vomiting. The tongue is white and dry, the secretion of milk is usually much interrupted, the lochial discharge is greatly diminished, the urine is high colored and scanty, and if the inflammation has extended to the bladder, it becomes totally obstructed; the body is costive, and the pulse is full, hard, and frequent.

These are the symptoms which usually present themselves when the inflammation does not run very high, and is perfectly distinct.

Where the uterus has been ruptured, a vomiting comes on, and the matter thrown up is of a black color, resembling coffee grounds, the pulse sinks and becomes irregular, cold clammy sweats break out, and frequent syncope ensues.

Uterine inflammation is always attended with much danger, particularly where the symptoms are violent, and the proper means for removing them have not been timely adopted. In such cases it may terminate either in suppuration, scirrhus, or gangrene and mortification.

Frequent rigors, succeeded by flushings of the face, quickness and weakness of the pulse, great depression of strength, delirium, and the sudden cessation of pain and soreness in the region in the abdomen, denote a fatal termination: on the contrary, the ensuing of a gentle diarrhoea, a lochial discharge returning in due quantity and quality, the secretion of milk recommencing, and the uterus becoming gradually softer and less tender to the touch, with an abatement of heat and thirst, prognosticate a favorable issue.

*Treatment.*—Full courses with the proper intermediate remedies, when the first indications are developed, will, invariably, effect a speedy cure.

*Peritonitis, or inflammation of the peritonæum.*—The peritonitis of the puerperal state appears to be only the common inflammation of the peritonæum attacking a woman already laboring under debility, and being somewhat conjoined thereby with puerperal fever.

Peritonæal inflammation frequently occurs in women after delivery, and is produced by the same causes which give rise to an inflammation of the uterus, viz. tedious and difficult labors, officiousness in the midwife, the use of instruments and exposure to cold.

In some cases of peritonitis the inflammation attacks only a small portion of the membrane at first, and is afterwards communicated to the whole of it; and in others it occupies the whole at once. The patient usually is seized with rigors and shiverings; thirst, fever, and an accelerated pulse, and soon feels considerable pain, with soreness, either in a particular part of the abdomen, or over the whole of it. The uneasiness and pain increasing rapidly, the abdomen becomes puffed up and swelled to a size nearly equal to what it was before delivery. From the inflamed state of the parts, and the exquisite pain which prevails, the very weight of the bedclothes becomes irksome and insufferable; and in order to support it, the patient is obliged to lie on her back with her knees bent in towards her belly. She is, moreover, incapable of bearing the least motion.

The stomach in most cases is much affected, and a constant sickness, with a vomiting of bilious matter, ensues. The state of the intestines is variable; sometimes costiveness prevails, at others a purging, and



sometimes the body is perfectly regular. The bladder likewise becomes affected, and there arises a constant inclination to make water, but which comes away, however, in a very small quantity at a time.

As the disease advances and the tumefaction augments, great difficulty of breathing ensues; and in consequence of the general determination to the bowels, the secretion of milk becomes much diminished, and is entirely stopped; the breasts are flaccid and empty, and the lochial discharge is perhaps wholly suppressed.

The system is usually affected with a mixture of general inflammation and symptoms of irritation; the pulse is frequent, small, and contracted, beating about 120 or 130 in a minute; the skin is dry and hot, with flushing of the face and redness of the eyes; the tongue is white and dry, with the prevalence of great thirst; the appetite is diminished, but not wholly lost; and the patient is restless, uneasy, and gets little or no sleep.

The disease continuing to proceed in its course, all the symptoms become highly aggravated, and at last a total cessation of pain ensues; the pulse becomes still smaller, but is at the same time more frequent; cold clammy sweats break out, the urine and fæces come away involuntarily, the extremities are cold, and the patient is carried off in the course of the sixth, seventh, or eighth day.

Chronic inflammation of the peritonæum is not a very unusual sequela of the acute species, when the patient survives that. We may regard the following appearances in a favorable light: The pulse becoming fuller and less frequent, the skin moister and cooler, the respiration less laborious, the urine being voided in a proper quantity and less frequently, the return of the milk in the breasts, the re-appearance of the lochial discharge, a gradual diminution of the pain and tension in the abdomen, with the ability of remaining in a sitting posture, and the coming on of a gentle diarrhœa towards the close of the disease. On the contrary, we are to consider the sudden cessation of pain, with a sinking pulse, effusion and tumefaction, as fatal symptoms.

Peritoneal inflammation is to be distinguished from enteritis by the pain being permanent; by its being increased by pressure, even before any tension has taken place on the abdomen; by its producing no inclination to go to stool; and by its not being diminished if this evacuation should take place spontaneously.

*Treatment.*—In the cure of this disease, the same mode of treatment which has been advised for an inflammation of the uterus must be adopted.

Throughout the whole period of these disorders the patient is to be supported by food of a light nutritive nature, administered in small quantities at a time, and repeated frequently, so as never to overload the stomach.

*Febris puerperarum, or puerperal fever.*—Great soreness, pain, and tension of the abdomen, short anxious breathing, uncommon quickness of the pulse, increased temperature of the body, tensive pain over the forehead, peculiar wildness of the eyes, prostration of the vital powers, suppression or diminution of the milk and lochia, a flaccid state of the mammae, and an unnatural condition of the excrements, accompanied

by diarrhoea, may be regarded as the pathognomonic symptoms of puerperal fever. Its epidemical prevalence at times, is a sufficient characteristic of its nature, because this circumstance never takes place with respect to simple inflammation of the uterus and peritoneum.

It is a disease peculiar to women after delivery, particularly in hospitals, and is supposed to occasion the death of nearly one-half of those who die in child-bed. Until of late it had not been much noticed by medical writers, and even now various opinions are entertained with regard both to its nature and the causes producing it. Some have doubted if it deserves the title of specific, or ought to be regarded as a particular genus; and these have been accustomed to look on it as only a simple modification of the known species of fever, taking its origin from the leaven of the prevailing epidemic constitution, whether inflammatory or putrid, modified by the habit of body, the mode of living, the age and temperament of the patient, the preceding causes, the season of the year and temperature of the air, &c. Others again have considered the disease as uterine and peritoneal inflammation, accompanied in its progress by fever of a low malignant nature, or typhoid type. Indeed the diagnosis between puerperal fever and the more common forms of peritoneal and uterine inflammation which occur in the puerperal state, is still obscure and undetermined.

A stoppage of the lochia has been assigned as one of the causes of puerperal fever; but the circumstance of their being sometimes absent and sometimes present at the attack, and during the progress of the disease, shows their perfect independence of each other. Others again have thought that puerperal fever is produced by the absorption of a putrid sanies arising from dead parts of the omentum or mesentery, or some other putrid material in the abdomen or uterus. By a few physicians it has been represented as owing its existence to an undue secretion of milk; while others have supposed that it derived its origin either from a redundancy, or too great a crimony of the bile, the secretion of which appears to be much interrupted during the time of gestation.

With respect to the infectious nature of this fever, a great contrariety of sentiment has indeed existed: the probability is in favor of its being so; but it is nearly impossible to form a decided opinion on the subject. Doubtless it will be the safest practice to consider it as infectious, and to cut off all intercourse of pregnant and parturient women with those who labor under it.

The period at which women are attacked with the disease is uncertain, as in a few instances it has arisen at the distance of a week after delivery: but the most usual time of its attack is on the third and fourth day after the event. The patient is seized at first with a slight coldness and shivering, succeeded by pains in the head, ringing in the ears, flushing in the face, great anxiety, and restlessness. As the disease advances, the whole abdomen becomes affected, is highly painful to the touch, and much tumefied. She likewise feels great pain in the back, hips, and sometimes in the legs, and she performs respiration with difficulty, the breathing being short and laborious from the pressure against the diaphragm, as well as from an organic affection of the chest itself. If the milk has been previously determined to the breasts, it suddenly dis-

appears on the approach of the disease ; but if the attack of fever commences sooner, the milk does not appear. The lochia are altered both in quantity and appearance ; the urine is turbid, small in quantity, and voided with pain, and a tenesmus often arises. The skin is hot and dry, the pulse weak and frequent, the number of pulsations being often from 110 to 130 in a minute ; thirst prevails, and there is vast prostration of strength, with anxiety, depression of spirits, a disinclination to suckle, carelessness about her child, and watchfulness. To these symptoms are added a tensive pain over the forehead, and a peculiar wildness of the eyes.

A vomiting not unfrequently attacks at the same time, and in so high a degree as to prevent the smallest quantity of food or medicine from being retained on the stomach. The matter thrown up is of a dark porraceous color, and often of a disagreeable smell. The functions of the primæ viæ are likewise much disturbed. At the commencement, they usually go on well ; but in the progress of the disease, a severe purging often ensues, particularly in those cases where the abdomen has been much distended, and the dejections are abundant, serous, and putrid. It seldom happens that any violent delirium arises, but the patient is apt to fall into a low comatose state, wishing by no means to be disturbed.

After one or two day's continuance of these appearances, the fever often acquires a malignant and typhoid tendency, particularly in hospitals and confined situations, or when the state of the atmosphere predisposes to diseases of that nature ; the lips, teeth, and tongue are covered with a dark brown fur ; aphthæ beset the whole internal surface of the mouth, tongue, uvula, tonsils, and pharynx ; the breath is highly offensive ; the stools are fetid, of a dark brown color, and pass off involuntarily ; and in a few cases purple spots appear on different parts of the body.

Such in general is the course of the puerperal fever ; the symptoms of which, however, may be often varied, according to the constitution of the patient, the degree of the disease, and its earlier or later invasion after delivery.

Puerperal fever is readily to be distinguished from that affection known by the name of after pains, by the intervals of ease which attend these last, and by absence of fever and abdominal tension ; whereas in the former there is fever with its concomitant symptoms ; great soreness and swelling of the abdomen, and in almost uninterrupted continuance of pain throughout the course of the disease.

Many circumstances evince a dissimilarity between the puerperal and miliary fevers, notwithstanding the symptoms of anxiety and oppression are common to both. In the puerperal fever the rigor is more violent, of longer duration, and not interrupted, as in the other. The pulse at first is fuller and stronger ; the skin is more hot ; and the tongue, whether moist or dry, though generally the latter, is not of a white but brownish appearance.

Peritoneal inflammation is the disease which bears the strongest resemblance to puerperal fever, but it never arises from contagion, or prevails epidemically.

By paying proper attention, we may in general be able to distinguish simple peritonitis from puerperal fever. In the last, the abdominal pain is not the most prominent symptom. There is more despondency, debility, and headache, less heat of the skin, less thirst, and less flushing of the face. In the former the pain in the abdomen usually increases rapidly after its commencement, and the swelling increases along with it: pressure excites considerable pain, and the fever is inflammatory throughout.

Hysteritis has its proper symptoms by which it may readily be distinguished from puerperal fever.

The progress of puerperal fever is sometimes so very rapid, particularly in warm climates and hot seasons, as to destroy the patient in forty-eight hours. Even in cases seemingly the most favorable, we should look on the event as doubtful, as the complaint is apt to be accompanied with delusive remissions, and indications arise in its progress which are by no means equal to the danger.

The risk seems however to be greater in proportion as the accession is sooner after labor. When the disease comes on at a late period after delivery, the depression of strength is usually less considerable, the tumefaction of the abdomen is less extensive, and the other symptoms are not so violent, and consequently there will be a greater chance for the woman's recovery.

The re-appearance of the lochia, and a gradual subsidence of the abdominal tension and soreness after copious stools, the pulse at the same time becoming slower, with a moist skin, may be regarded in a very favorable light. On the contrary, an agitated countenance, with a hurried unconnected manner of speaking, constant sighing, attended with a tossing about of the arms, pain and oppression at the chest, visual deceptions, imaginary strange sounds and voices, muttering and stupor, are to be considered as unfavorable symptoms. An extensive swelling of the belly, so as to sound on striking it with the fingers, sudden cessation of pain, irregularity in the pulse, coldness in the extremities, clammy moisture diffused over the whole body, frequent dark-colored and fetid evacuations by stool, and an indifference to all external objects, denote certain and speedy death.

*Treatment.*—The remediate measures employed in this, as well as the preceding disease cannot essentially vary from that advised for most of the acute forms of inflammation of the different viscera. No particular fear need be apprehended, if the aid be prompt and efficient. Full and frequent courses, with long steamings, must be chiefly relied on. To keep up a proper cutaneous exhalation, composition, with broken doses of lobelia, may be given. If the strength of the patient sinks, the best stimulation should be directed.

The patient should observe the strictest cleanliness both as to herself and the bedding. On the coming of the milk, her breasts ought to be drawn repeatedly throughout the course of the day by some person accustomed to the business, or by applying the child; her body should be kept perfectly open after she is delivered, as well as before her confinement, by some mild purgative medicine, and an upright posture will



be most proper, in order to discharge more readily any putrescent matter that may be in the uterus.

When the disease prevails as an epidemic among puerperal women, all communication ought immediately to be cut off between those who are affected and such as have lately lain in, or expect shortly to do so.

*Inversio uteri*.—This complaint consists in the inversion of the cavity of the uterus, so that the fundus comes through the os uteri, consequently that part which was formerly the inside of a cavity becomes now the outside of a tumor, either in or projecting from the vagina.—It most commonly is the consequence of mismanagement of the placenta, by the midwife or accoucher being in too great a hurry to extract it.

Its immediate effects are hæmorrhage, faintness, and a sense of fulness in the vagina.

When early discovered, the uterus may easily be reduced to its natural situation. If the placenta be adhering to the womb, the latter should be reduced before any separation of the former be attempted, to prevent hæmorrhage.

*Procidentia uteri*.—This complaint consists (as the name implies) in a change of the situation of the womb, by which this organ falls much lower than it ought to do. In some cases it absolutely protrudes entirely without the vagina. The slighter cases are therefore named a bearing down, and the more violent ones a descent or falling down of the uterus. The complaint is met with in women of every rank and age; but more frequently in those who have had several children than in such as have not had any.

Every disease which induces general debility, or local weakness in the passage leading to the womb in particular, may lay the foundation of this complaint; hence immoderate venery, frequent miscarriages, improper treatment during labor, and too early or a long-continued erect posture of the body soon after delivery, and in some cases after abortion, are in married women the most common causes of procidentia uteri. At this time the womb weighs eight or ten times more than when minimally pregnant, and descends by its gravity. In the unmarried it is apt to take place in consequence of violent exercise, such as jumping, dancing, riding, lifting heavy weights, &c., while out of order.

The proximate or immediate cause of prolapsus uteri is relaxation of the broad and round ligaments above, and want of tone in the vagina below.

The disease comes on generally with an uneasy sensation in the loins whilst standing or walking, accompanied now and then with a kind of pressure and bearing down, as also pains in the groins extending to the labia. There is a sense of fulness in the parts, and probably an increased discharge of transparent mucus from the vagina. All the symptoms are relieved by a recumbent position. In procidentia uteri the symptoms arising from the uterogastric sympathy are in many cases very distressing; the appetite fails, the stomach and bowels lose their tone, flatulence is troublesome, considerable debility ensues, the spirits are depressed, employment and exercise become irksome, and life at last is scarcely desirable. The discharge varies much at times, the menstrual

flow usually is increased, and menorrhagia not unfrequently attends. Before the external protrusion of the tumor, the discharge is greater than afterwards, because the surface of the vagina ceases to secrete when permanently exposed to the air. After a time, patches of healthy looking ulceration attack the exposed vaginal surface, but seldom go deep; and the os uteri is not unfrequently assailed by one of these.

By neglecting to pay proper attention to the early symptoms and threatenings of the disease, the woman becomes at length incapable of making water without first lying down or pushing up the swelling which seems to impede the discharge of urine; and if the complaint continues to increase, the womb is actually forced out of the parts, and takes on the form of a bulky substance hanging down between the thighs. This severe degree of the disorder seldom occurs, however, among women in northern climates, except in those who have had many children, and are at the same time of a relaxed and feeble frame; but in warm climates it is very frequently to be met with, and particularly in negroes and mulattoes, among whom the protruded parts considerably ulcerated are often observed, and occasioned, no doubt, by external irritation and a neglect of cleanliness.

Although procidentia uteri is a local disease, it is frequently productive of several distressing symptoms which undermine the constitution. These principally arise from the disturbed functions of the stomach and bowels, and an impaired condition of the nervous system.

In its early stages, if conception should take place, a confinement for some weeks in a recumbent position on a sofa or bed will often enable the parts to regain their tone, so as to render subsequent artificial assistance unnecessary. Where pregnancy does not exist we must have recourse to art. If the disease is of long standing, it may be difficult to effect a cure.

*Treatment.*—In the treatment of procidentia uteri, the curative intentions are to increase the tone of the relaxed parts, both topically and through the constitution, and to support the tumor: topically by the application of cold water and by astringents. Cold water ought to be applied to the parts of generation, as also to the belly and back, by means of a large sponge, three or four times a day, the water being as cool as possible. Cold water may also be thrown into the vagina as frequently by means of a syringe. In very slight cases, these means, assisted by a horizontal position, may be sufficient; but in cases of some standing, astringent washes should be substituted for simple water. A decoction or infusion of some vegetable astringents will make appropriate injections, and should be used two or three times per day.

In aid of topical applications, tonics must be administered internally, such as the wine bitters, spice bitters, and woman's friend.

Due attention should be paid at the same time to the state of the bowels—the extreme of constipation and diarrhœa being equally injurious. The aid of the syringe to liberate any oppression, is much preferred in this disease than the use of aperients.

In every case of procidentia uteri, the recumbent posture on a sofa or hard mattress as much as possible ought to be enjoined. The diet

should be generous and nutritive, and a moderate quantity of wine be allowed.

Sometimes the only relief that can then be afforded, unless the woman becomes pregnant, is to be obtained by wearing a pessary. This is usually made either of gum elastic or ivory, and if properly adapted to the passage and of a fit construction, may be worn without much inconvenience or any pain. Whenever such an instrument is used, certain attentions will, however, be necessary. Thus, the pessary should never be allowed to remain in the passage above a few days at a time, otherwise it may become the source of some irritation. It ought, therefore, to be withdrawn occasionally on going to bed, be well cleaned, lest the secreted matter attached to it become acrimonious, and be reintroduced in the morning before the patient quits her bed.

Pessaries are always either circular or oval; the former can only be used where the disease has not made much progress, and when the tone of the vagina is not much impaired. It will seldom be safe to introduce a circular pessary, the diameter of which exceeds two inches and a half; it should be large enough however to keep the situation in which it is placed, else it will slip away; but it should not be of such a size as to incommode the woman or to injure the parts by its pressure. Occasionally the pessary should be changed for one of a smaller size, as the vagina recovers its proper tone. The oval pessary rests with its longest diameter across the vagina, neither interfering with the rectum nor the urinary passages. It seems best adapted for those cases in which the tone of the vagina is so much diminished as to require a larger support. Its longest diameter ought not to exceed three inches and three-quarters. All pessaries ought to be introduced with great care, and be placed as high up in the vagina as possible.

Before any attempt is made in the reduction of prolapsus uteri, it will first be necessary to empty the bladder and rectum: this being done, let the patient be so placed as that the pelvis shall be much higher than the shoulders. The practitioner is then to apply his fingers and thumb to the lower part of the tumor where the os uteri is situated, and by a gentle and gradual pressure this is to be carried up into the center of the tumor itself. The pressure is afterwards to be continued until the parts are returned into their proper place. A pessary is then to be introduced, and the patient to be enjoined to remain in a recumbent posture for several hours.

Where a woman who is liable to prolapsus uteri becomes pregnant, there will be no occasion for the pessary after the third month, and by proper treatment after delivery, a return of the complaint may probably be prevented.

In married women, whilst there remains a possibility of pregnancy, the hope of a radical cure continues, because the processes to which the vagina and parts connected with it are subjected after parturition, often produce a permanent reduction of the tumor. In these cases the principal remedies therefore are pessaries. But the complaint frequently remains after the period of menstruation is over, and when all likelihood of a radical cure is done away.

## DISEASES OF INFANTS.

Much attention and experience are required to treat the diseases of infants judiciously; close and repeated observation being the principal means of supplying the want of that kind of assistance which the personal information of adult patients generally affords. The disorders of early infancy are, however, more obvious than has been generally supposed; their number is comparatively small, their causes are uniform, and the treatment of most of them is simple and pretty certain.

Improper food, confined and unwholesome air, the want of due exercise and cleanliness, difficult dentition, and unhealthiness of the parents, are the most general causes of the diseases of infants. Others have indeed been enumerated both by ancient and modern writers, such as their general laxity, the greater irritability of their nervous system, and the delicacy of their muscular fibres, which may indeed be considered as so many predisposing causes.

The symptoms of the first diseases of infants (by which we also judge of their nature) are chiefly retention and excretion, sour belchings, sickness, vomiting, purgings, inquietudes, crying, wakefulness, heaviness, loathing of the food, contractions and sharpness of the features, blueness about the mouth, turning up of the eyes, sudden startings from sleep, thirst, heat, the manner of breathing and of crying, retraction of the lower extremities, hardness and distension of the belly, and pustules or eruptions, external or internal. To these may be added the openness or firmness of the fontanelles and of the sutures, the strength and figure of the bones, and the relaxation or contraction of the skin in general, and of the scrotum in particular. The pulse and urine are less certain marks, in the greater number of their complaints, than they are in older children and adults.

Small-pox, chicken-pox, measles, scarlatina, and such other eruptive diseases, together with croup, hydrocephalus, ophthalmia, whooping-cough, scrofula, rickets, tinea capitis, worms, and a great many other diseases, being equally liable to attack children of a maturer age, have already been noticed in the preceding pages of this work, in the class and order to which each belongs.

During the first months of a child's life, the milk of its mother is unquestionably preferable to every other kind of nourishment, and even to the milk of another woman, provided the parent is in good health, and labors under no malformation of the nipples, or constitutional imperfection of importance. As, however, it is usually more convenient, and at times absolutely necessary, to bring up the child partly by the hand, as it is called, at the same time that it sucks, we should be careful to regulate the diet both with regard to the quality and quantity, that its stomach may neither be disordered with what is improper nor be oppressed with excess. The food which is prepared by art should be thin and liquid, and be made fresh every day. It is to be offered to the infant frequently by little at a time, and at proper intervals, and not to be crammed down its throat as often as it awakes from sleep, or cries, as is the custom with many nurses. Instead of a spoon, a horn or glass bottle covered with



parchment, and perforated so as to imitate a nipple, may be used.— This gives occasion to some little exertion in sucking, imitative of what we see in nature, and is moreover attended with the advantage, that the infant will not be gorged or induced to take more than it really wants.

At first it will be sufficient to give infants occasionally, along with the breast, a little milk and water warmed to the temperature of the mother's milk, with a very small proportion of sugar; or we may substitute thin gruel made from pearl barley, grits, rice, or arrow-root, mixed with about a third of cow's milk, which may occasionally be changed for thin pap made with bread or biscuit, with a due proportion of fresh milk; but all these should first be passed through a lawn sieve, to insure their being thin and smooth.

At the end of five or six months the diet may be made a little stronger, consisting of plain mutton or chicken broth, clear and free from fat, or beef-tea, and occasionally some light pudding may be allowed.— About the eighth or ninth month a small portion of animal food may be given, particularly if nature has pointed out its propriety by early dentition. The animal food given to young children should be plainly roasted or boiled, hot or cold: fried and boiled meat, and what is heated a second time by hashing or mincing, being less digestible, ought to be avoided.

If teething commences soon and goes on well, the infant may be weaned at about nine months old; but if dentition is late, or accompanied with much irritation, it may continue at the breast for a whole year, provided the health of the mother will admit of it, or that she is not again pregnant. When the child is weaned, any kind of light plain animal food may be allowed it once a day, with a due proportion of vegetables, consisting principally of the farinacea, as flour, rice, sago, &c.

From a mistaken expectation of strengthening weakly children, some people give them animal food twice or thrice a day, but this is injudicious. The most proper drink for children will be plain water.

The practice of swathing infants with bandages is now judiciously laid aside; and deformity, as a consequence of dressing or clothing children improperly, is rarely to be met with. The rule to be observed with respect to the article of dress, ought to be, that a child have no more clothes than are necessary to keep it warm; that they sit easy and loose on its body: and that they be changed frequently, especially when they happen to be wetted. Dirty clothes not only gall and fret the tender skin of infants, but likewise give them an unpleasant smell, and are apt to produce cutaneous disorders, if not vermin; whereas cleanliness, assisted by gentle friction with the hand over every part of the body morning and night, together with proper ablutions with tepid or even cold water, tends greatly to preserve the health of children, and promotes perspiration.

In dressing the infant, if the nurse observes the skin any where chafed, after washing the parts and drying them well, let her apply a little common hair powder to it by means of a puff; but if much galled, which will sometimes happen at the time of teething, particularly in very fat children, from the heat and sharpness of the urine, let her bathe them

with a wash composed of two parts of common water and one of rectified spirit, and afterwards sprinkle them with a little burnt flour, or starch, powdered very fine. When cutaneous eruptions appear during dentition, no repellant application should be employed.

A young child should be amused through the day, and not suffered to sleep much during that time, that it may get the more rest by night. The curtains of its bed should not be drawn closely round, that it may breathe free and easily. It should be early accustomed to be much in the open air, for vigor of the body conduces to that of the mind; and as it is incapable of any exercise of itself, it should be the business of its nurse or other attendant to toss it well about in her arms from time to time. If the season of the year will admit of it, bathing the child frequently in cold water will very much tend to strengthen and invigorate it.

The chamber which is appropriated for the nursery should be roomy, and it ought to be kept remarkably clean, sweet, and properly ventilated.

*Asphyxia*—(*suspended animation*.)—The apparent cessation of life in new-born infants may be owing to various causes, such as universal weakness of the vital powers, collections of glairy matter in the vesicles of the lungs, the introduction of a quantity of the liquor amnii into the trachea, and a congestion of blood in the lungs, arising either from the neck of the child being tightly encircled by the os uteri or navel-string, or from the head being long detained in the passage. Asphyxia sometimes takes place also, in consequence of a portion of the funis protruding through the os uteri during labor, by which means the circulation through the cord is completely interrupted.

When universal weakness of the vital powers seems to be the cause of asphyxia, we must be cautious not to suffer any effusion of blood from the umbilical cord. The communication between the child and the mother should be kept up as long as possible; for which reason we should avoid any violent pullings at the cord, that the placenta may not be too soon detached; and we should likewise not be in a hurry to apply a ligature.

It not unfrequently happens, after a tedious labor, or where a portion of the funis has protruded through the os uteri during labor, so as completely to interrupt the circulation through the cord, that the child is so weak and faint as to show little or no signs of life. In such cases, after cleansing it and wrapping it in flannel, we should stimulate its temples and nostrils with spirits of hartshorn, and rub its chest with brandy. If these means fail to excite the languid circulation, we should then introduce a pipe or catheter into its mouth, and thereby endeavor to inflate the lungs; pressing the thyroid cartilage at the same time to prevent the air from passing down the œsophagus, which plan ought to be pursued for a considerable length of time, as there is great reason to suppose that many children might be saved were we to adopt the means which have been pointed out, and continue them long enough. Stimulating the intestinal muscles to contraction, by rubbing No. 6 on the child's thorax, so that air may rush in by the glottis, may likewise be tried. Besides inflating the lungs and pursuing the other steps which have been mentioned, care

should be taken that the child does not lose its heat; for which reason it will be advisable to put it into a bath of warm water; and while this is preparing, it may be enveloped in warm flannel.

Where a portion of the liquor amnii gets into the trachea and produces asphyxia, or the mouth of the infant is discovered to be filled with a glairy matter, rendering the respiration difficult, sonorous, and rattling, we must not only rinse the throat of the child, but likewise place it in an attitude which will facilitate the discharge of the liquor. Having done this, we should endeavor to re-animate the infant, by inflating the lungs, and then pressing out the air, imitating in this way, for a considerable length of time, natural respiration.

Professional men being often called upon to give evidence before a court of judicature in cases of supposed infanticide, it seems right to mention, that much careful observation is required to discriminate between a child that is still-born, and one that has lived only a short space of time after its birth. Various appearances also, both internal and external, may be mistaken for marks of violent death. Even the swimming of the lungs in water, a test on which much reliance has been placed, is on many occasions found to be fallacious; for they will float in consequence of a putrefactive process having commenced, as well as when filled with air by respiration.

A woman suffering the pains of labor, may have the fœtus escape from her and fall to the ground on its head whilst she is resting on her knees and elbows, or standing on her feet, so as that the child shall be destroyed unintentionally. It should also be understood, that an infant, even at the full time of utero-gestation, may escape from a woman into a privy, or any such-like place during her exertions to evacuate the contents of the intestines, and this may happen without her intending to destroy it. Such cases beyond doubt do sometimes occur.

It may likewise happen, that an unmarried woman, on coming to her full time, and having concealed her condition, may be taken ill when by herself, and be delivered of a live child: but that either from syncope ensuing speedily, or her being suddenly deprived of reason from a distracted state of mind, owing to a sense of the shame which will attach to her foible, she may be so overcome as to be rendered incapable of assisting the infant, whereby it may suffer suffocation under the bed-clothes, or be otherwise so injured as only to make a few inspirations.—In other instances it may happen, that although the child is born alive, still, from its universal weakness, the want of due assistance, the circulation of blood between the mother and child being so interrupted either from undue pressure in its passage, or the umbilical cord being twisted round its neck in various convolutions so as to produce congestion in some organ important to life, or from hæmorrhage from the umbilical cord, when no ligature has been applied to it; or from some other cause, it may soon cease to breathe, without receiving any intentional injury from its mother. No doubt occurrences of this nature do sometimes take place; and they clearly point out the impropriety of placing any reliance on the floating of the lungs in water, as a test of infanticide.

The floating of the lungs of a new-born infant, where no putridity exists, incontestably proves that it has breathed; but, although this is

the case, the presumption that the mother has *intentionally* destroyed it, is by no means satisfactory or clear.

Justice undoubtedly requires from every medical practitioner, that his evidence before a coroner or jury should be regulated by truth; but humanity and mercy dictate to him, that he ought to have the fullest assurances of guilt, before he gives an opinion that may deprive a fellow-creature of life. On all such occasions he should recall to mind the holy text which tells us, it were better that many guilty escape punishment, than that one innocent suffer.

*The black or livid color of infants.*—It sometimes happens, that immediately after birth the face and neck of the infant put on a livid or black appearance, the lips become purple, and the breathing short; which symptoms either go off soon again, or terminate in death.

They are to be attributed either to an imperfect closure of the foramen ovale, or some malformation of the heart or lungs; or to the vessels having imperfectly undergone those changes which are necessary for all animals who breathe common air. Nevertheless it will be proper in all such cases to immerse the child in a warm bath, and give a few drops of the tincture of lobelia in warm water.

*A retention of the meconium.*—A dark-colored viscid matter, known by the name of meconium, is contained in the bowels of all infants at their birth, and is usually discharged during the two or three first days, in consequence of the milk of the mother, which is first secreted, being somewhat of an aperient nature.

In general this will be sufficient to bring off the meconium; but where it fails to do so in the course of a day or so, the aid of medicine may be necessary, and the best we can employ is a little molasses and water.

*The yellow gum, or icterus infantum.*—This is a species of jaundice which affects many children at or soon after their birth, and which usually continues for some days.

It has generally been supposed to arise from an obstruction of the biliary ducts forcing the bile back upon the liver, from the meconium impacted in the intestines, or from mucus or viscid matter clogging the ductus communis.

The effects produced by it are, langor, indolence, a yellow tinge of the skin, bilious urine, and a tendency to sleep, which is sometimes fatal where the child is prevented from sucking.

For the most part the disease is easily removed by clearing the intestines by some mild laxative, such as a little molasses and water, or oil and molasses, where the mother's milk does not of itself prove sufficiently aperient.

The disease, in some instances, has been supposed to proceed from a viscid matter obstructing the gall-ducts. In these it may be necessary to give a gentle emetic, consisting of a few drops of the tincture of lobelia, and on the succeeding day we may administer four or five grains of bitter-root. Should the yellowness continue after these means have been adopted, the emetic as well as the opening medicine may be repeated in the course of a few days.

*Excoriations and ulcerations.*—From a neglect of proper cleanliness,



children are very apt to become chafed in the wrinkles of the neck, behind the ears, and in the groins.

To remedy occurrences of this nature it will be proper to bathe the excoriated parts twice or thrice a day with a little warm milk and water, and afterwards to sprinkle them with some absorbent powder, such as starch pulverised fine, or a little burnt flour.

Where the excoriations are very considerable, a little chloride of soda diluted, one to ten or twelve (i. e. one part of soda to that proportion of water) may be applied several times a day.

In some children of a gross habit of body, and particularly about the time of teething, a species of excoriation extending low down in the neck is apt to take place, which at length degenerates into large deep sores, and not unfrequently has terminated in gangrene.

Here the chloride of soda as a topical application, should be constantly applied; at the same time emetics and the bitter tonics liberally advised.

*Hiccoughs.*—Some infants are much incommoded by hiccoughs; and they arise probably either from acidity in the stomach, or from some nervous irritation.

In the former case, a powder composed of a little prepared chalk and bitter-root, (about eight grains of the former with two or three of the latter) may prove beneficial. In the latter, it may be proper to give a few drops of lobelia tincture several times a day.

*Infantile erysipelas.*—This is a very dangerous species of the spurious or erysipelatous inflammation, which is not often met with. The ordinary time of its attack being a few days after birth, it was, at the first of its being observed, thought never to appear later than the month; but this has since been found not to be the case. It seizes the most robust as well as delicate children, and in a very sudden manner; the progress is rapid; the skin turns of a purplish hue, and soon becomes much hardened.

The milder species appears often on the fingers and hands, or the feet and ankles, and sometimes upon or near the joints, forming matter in a very short time. The more violent kind is generally seated about the pubes, and extends upwards on the belly, and down the thighs and legs, though sometimes it begins in the neck, and is equally fatal. It seems indeed to be always less dangerous when confined to the extremities, than where it seizes on, or spreads to any other part of the body. The swelling is but moderate; but after becoming hard, the parts turn purple or livid, and very often sphacelate, especially in boys, when it falls on the scrotum; the penis swells, and the prepuce puts on that kind of emphysematous appearance, which it has been observed to do when a stone sticks in the passage, or in the anasarca of the scrotum.

The disease often proves fatal in a few days.

Dissections of such children as have been destroyed by this disease have frequently discovered the contents of the abdomen glued together, and their surface covered with an inflammatory exudation, exactly similar to that found in women who have died of puerperal fever and peritoneal inflammation. In males, the tunicae vaginales have been sometimes filled with matter, which has evidently made its way from the cavity of the

abdomen, and accounts for the appearances of the organs of generation just now described. In females, the labia pudendi are affected in like manner; the pus having forced a passage through the abdominal rings.

*Treatment.*—The chloride of soda, properly diluted, forms an excellent local application—any of the vegetable astringents may also be used with advantage. In the first stages, emetics will doubtless prove successful in many instances, in checking the inflammation. A little golden-seal may then be conjoined with some aromatic confection and given.

*Cutaneous eruptions.*—Children at the breast are very subject to slight eruptions, particularly during the first month; and these serve, no doubt, to relieve the body of some acrimonious humor. Of this kind is the red-gum, which consists in an efflorescence or small red spots, most usually confined to the face and neck, but in some cases extending to the hands and legs, and even over the whole body, appearing in large patches, and sometimes raised considerably above its surface. Now and then it shows itself in the form of small pustules, which are filled with a limpid, or sometimes a purulent or yellow fluid.

Every species of this eruption has generally been attributed to a predominant acid, but ought rather to be regarded as an exertion of nature to throw off something hurtful.

All that is generally necessary in this complaint, is to give a little magnesia, and occasionally a few drops of the tincture of lobelia, according to the state of the bowels, and to keep the child warm; otherwise by the rash striking in, the acrimonious humor will fall on the first passages, and be succeeded by sickness and purging, till perhaps the eruption appears again on the skin. In cases of nausea at the stomach, or any disposition to fits upon this eruption being repelled, a few drops of No. 6, may be given twice or thrice a day, and the child's feet, or perhaps the whole body, be put into warm water. The state of the skin and bowels has a peculiar consent; and on this account infants whose first passages have been frequently disordered, are always benefited by eruptions on the skin. In such, peculiar care is, therefore, necessary to guard against their being repelled, as well as to invite their return.

Another species of eruption which is frequently met with in young children, is that to which medical writers have given the name of *crusta lactea*, or *lactumen*. This often puts on a very unpleasant appearance, but is nevertheless of an innocent nature, and it has been observed that those children who have been much loaded with it have usually been healthy, and have cut their teeth easily. A remarkable circumstance attending this eruption, is, that however thick and long-continued the scabs may be, the *crusta lactea* never excoriates, nor leaves any scar on the parts.

The *crusta lactea* appears first on the forehead, and sometimes on the scalp; and then often extends half way over the face in the form of large loose scabs, which, as the disorder increases, appear not very unlike the small-pox pustules after they have become dry. It begins with white vesicles larger than the itch, which soon become of a dark color.

and then scab, with an efflux of ichor and great itching of the parts affected.

The rash generally disappears of itself when the child has cut three or four teeth, though it may sometimes continue for several months, and in a few instances even for years.

*Treatment.*—Frequent emetics, the sarsaparilla syrup, and the bitter tonics prepared in confectionary, should form the constitutional remedies; at the same time chloride of soda, the vegetable astringent washes and the third preparation, may be safely relied on as cutaneous treatment.

During early dentition a rash very much resembling the measles is apt to make its appearance, and this usually continues very florid for three or four days, but it does not dry off in the manner of that disease. It is often preceded by nausea and vomiting, but is attended with little or no fever.

Other rashes in which the spots are larger and often attended with some degree of fever (occasioned probably by the irritation of teething) are frequently to be observed during a more advanced stage of dentition, particularly while the double and eye-teeth are cutting.

A slight species of *essera* or nettle-rash is another eruptive disease to which infants are liable; but this requires in general little attention, and often disappears in a few hours. When the body is much covered with eruptions, and they remain long out, attention should be paid to their not being repelled suddenly by any exposure to cold, or by any other improper treatment.

An eruption very much resembling the itch is sometimes to be met with in infants at the breast; as likewise in children who have cut all their first teeth. It usually begins about the arms and thighs, but always spreads soon afterwards to the other parts, and not unfrequently extends from the head to the feet. In some places it appears in very small eruptions like the points of pins, with watery heads; and in others, in as large ones as peas; and sometimes in foul blotches, which, after breaking, form sores and broad ugly scabs. These die away, and similar ones show themselves successively in other parts, sometimes for two or three months, leaving the skin of a dirty hue.

In all the eruptive complaints of infants, their taking cold ought carefully to be guarded against, and the belly should be kept open.

In consequence of some bad quality in the milk of the person who nurses the child, it sometimes happens that an eruption comes out on different parts of its body. In all such cases the nurse should be changed. Constipation should likewise be obviated, and some gentle absorbent medicine be given once or twice a day.

In all these cutaneous eruptions the tincture of lobelia may be given to great advantage. A weak infusion of composition, or No. 6, properly diluted and sweetened with loaf sugar should be conjointly advised. Repellent applications should never be employed when eruptions appear during dentition.

*Acidities, gripes, and flatulency.*—Costiveness, improper or too much food, bad milk, weak digestion, and that natural tendency there is in the

stomach of all children to generate acidity, are the causes which give rise to these affections.

When the food becomes acid on the stomach, instead of being properly concocted and converted into chyle and blood, it is likely to give rise to continual crying, restlessness, drawing up of the legs forcibly to the body, hiccoughs, vomiting, diarrhœa, flatulency, sour eructations, griping pains, green stools, and a depression of strength; and where the irritation is very considerable, convulsions are apt to ensue.

If acidity prevails in a high degree, and the infant is troubled with sour belchings and much irritability at the stomach, it may be advisable to evacuate its content by lobelia; after which, a few grains of rhubarb and magnesia may be ordered, to carry off the remaining offending matter.

Acidities and flatulency sometimes prevail in so high a degree as to occasion severe griping pains, perfectly obvious by the infant's screaming, crying, and drawing its knees up to the belly, with the presence of abdominal tension. In such cases it will be necessary to dislodge the contents of the intestines, should costiveness prevail, by some gentle laxative clysters; after which we may administer No. 6, and a few drops of the tincture of lobelia. Besides adopting these steps, it will be proper to apply warmth externally to the stomach and bowels by means of heated bran or chamomile flowers put into a soft flannel bag, which probably will greatly assist in abating the pain.

Children that are partly brought up with the spoon, and who are very subject to flatulency, should always have a few caraway seeds boiled up with their food.

As acidities, gripes, and flatulency, seem frequently to originate in some error of the diet, the proper regulation of this ought to form a principal part of their cure. Sometimes it may be necessary to change it almost wholly, or at least to withdraw something from whatever farinaceous substances are used.

A costive habit of body is very apt to occasion flatulency and griping pains in infants. This ought therefore to be obviated by giving twice or thrice a week, as the occasion may require, a small quantity of castor oil, or we may substitute a few grains of magnesia in a spoonful of some mint-tea sweetened with a little syrup of roses or manna, to which may be added a few drops of tincture of lobelia in order to render it warmer, and quicken its operation. Either of these will be preferable to rhubarb, as this possesses too restraining a power, which is not to be counteracted even by joining it with magnesia. To promote the peristaltic motion in costive habits, it will be advisable to rub the region of the stomach and belly several times a day with a piece of flannel or the hand somewhat warmed, in addition to using medicine.

*Of vomiting.*—When what has been taken is returned crude and unaltered, it may be suspected to arise from over-feeding, and to require nothing more than temperance for its cure. Vomiting, however, is often an attendant on other complaints, and sometimes of itself constitutes an original disease.

Where there is a vomiting of digested food, it will be right to change the mode of diet, or to open the body by some gentle aperient. If these



means do not answer, and the vomiting continues, it will be proper to clear the stomach by a gentle emetic, and the bowels by the syringe.

*Of the looseness of the bowels.*—Various causes may and do occasion a diarrhœa in infants, and perhaps in the greater number of instances it is brought on either by too much or unsuitable food, in which cases a diligent attention must be paid both to the choice and regulation of the diet.

In some instances, however, it may be symptomatic of other diseases, or may arise from an exposure to cold, or an increased secretion of bile. In the latter case, it may be advisable first of all to cleanse the stomach by a gentle emetic; but in all it will be proper to clear the intestines, the operation of which being over, we may give a little of the prepared chalk, joined with some aromatic, twice or thrice a day.

When the stools continue to be more frequent than they ought to be, and are either slimy or tinged with blood, it will be necessary to repeat the rhubarb at proper intervals, and in the mean time the infant may take something to control the complaint, as well as proper nutriment to recruit its strength. Flour, sago, or rice boiled in milk, together with the jelly of a calf's foot or isinglass, with a small addition of wine, will be good articles of diet under such circumstances.

*Trismus nascentium, or the locked jaw of infants.*—This is a disease of very frequent occurrence in southern latitudes, where many infants are carried off by it soon after birth, and especially negroes and those of color, as they are usually called. It is well known, however, to prevail in other parts of the world.

In most cases the disease is wholly confined to the jaw; but in a few a considerable contraction and rigidity of other muscles of the face, with strabismus and rolling of the eyes, together with subsultus tendinum, have been observed.

It has been attributed to visceral irritation, costiveness, and not purging off the meconium in the bowels; to dividing the navelstring with a blunt lacerating instrument; to not paying attending to its falling off, and consequent irritation from a neglect of the remaining sore, which assumes a sloughy appearance; and to exposures to cold, and currents of air, negro women being usually permitted to lie in at their own houses, which are often in but very indifferent repair.

*Treatment.*—The warm bath and lobelia emetics, will always cure this form of infantile disease with certainty and safety.

*Febbris infantum remittens, or the infantile remittent fever.*—From the age of one year to five or six, children are liable to be attacked with a fever, that makes its advances very gradually, manifesting itself by irregularity in the bowels, which are sometimes too costive, and at others too much relaxed.

On its coming on, the child becomes fretful, his lips are dry, his hands hot, his breath short, the head painful, and his pulse quick, being often 120 in a minute; he is unwilling to stir or speak, the sleep is disturbed by startings, and the food rejected; sometimes very little is discharged from the intestines; and at others too much, the stools being often mucous or slimy; some children are delirious, or lost and stupid; many for a time are speechless. In the course of the day there are

several slight accessions of fever, during which the child is usually drowsy; in the intervals of these paroxysms he appears tolerably well, though at times more peevish than usual.

These symptoms probably manifest themselves, more or less, for eight or ten days, when all at once a more violent paroxysm of fever will arise, preceded by a shivering fit and by vomiting. The pulse rises to 140 in a minute; the cheeks are flushed, the drowsiness is much increased, and the child keeps picking almost incessantly at the skin of the lips and nose, and of the angles of the eyes.

This species of fever is mild at its commencement, slow in its progress, and very uncertain in its event. In some respects it resembles hydrocephalus, and sometimes mistaken for it; but in the latter there are occasional screamings, with much tossing of the hands above the head, intolerance of light, with more or less of squinting; whereas in the remittent fever of infants, none of these appearances are to be met with. In this fever the desire for food is destroyed, and the little patient will take neither aliment nor medicine. In hydrocephalus, on the contrary, he will usually take whatever is offered to him without reluctance. The fæces are remarkably changed from their natural appearances in the remittent fever, being sometimes black, and smelling like putrid mud; and at others they are curdled, with shreds of coagulable lymph floating in a dark-greenish-colored fluid. In acute hydrocephalus we meet with nothing very similar to the motions.

The infantile remittent fever appearing to depend partly upon an irritation of the intestines, and perhaps partly upon an absorption of their putrid contents, the proper intensions of cure are to clear the stomach by a gentle emetic, and the bowels by purgatives, to moderate or remove the febrile symptoms, and then, to restore the lost energy by tonics.

A tepid bath may be useful in this fever after the stomach and bowels are properly cleansed.

To obviate debility when the fever goes off, we may recommend a daily use of some tonic medicine, if judged necessary.

*Aphthæ, or thrush.*—The thrush in children has generally been supposed to arise from acidities, or some other acrimonious humor lodged in the stomach and bowels. Various causes of derangement in the alimentary canal are certainly to be regarded as those which occasion aphthæ. One of the chief of these is worms, and it appears in this way that these two complaints are so frequently conjoined. Another occasional cause is bad milk, which may be vitiated by whatever is injurious to the nurse's health, such as great anxiety, violent passions, poor diet, &c.

In some instances the thrush may possibly depend upon the natural habits of the infant as well as upon the mode of bringing it up, particularly in regard to food, air, and the state of the bowels. This seems a warrantable conclusion, inasmuch as the thrush is sometimes found to seize every infant in certain families, in whatever way the children may be managed, as well to occur occasionally in others upon a want of proper attention to the state of the alimentary canal, where a great number of other children properly watched have uniformly escaped it.

The disorder generally appears first in the angles of the lips, and then on the tongue and cheeks, in the form of little white specks. These, increasing in number and size, run together more or less according to the degree of malignity, composing a thin white crust, which at length lines the whole inside of the mouth from the lips even to the œsophagus, and is sometimes found to extend into the stomach and throughout the whole length of the intestines; producing also a redness about the anus. When the crust falls off, it is frequently succeeded by another of a darker color or livid hue; but this happens only in the worst kind of thrush, for there is a milder sort that is spread thinly over the lips and tongue, which returns a great many times, and always lasts several weeks.

When the thrush is an original disease, it is never attended with any fever at its commencement, although the mouth is frequently so much heated as to excoriate the nipples of the nurse, and becomes so tender that the child is often observed to suck with reluctance and caution; but when it has arisen in consequence of severe bowel complaints, or other infantile disorders, it is then sometimes accompanied with fever and a severe diarrhœa. Even in very bad kinds of thrush there does not appear, however, any evident fever at the commencement of the complaint; but towards the close it may be apparent, and is sure to be of the low kind. Violent hiccoughs, vomiting, sense of suffocation, great prostration of strength, severe diarrhœa, coma, and aphthæ being of a brown color, and any of the symptoms of cyanache maligna attending, are to be considered as very unfavorable.

The disease when recent and confined to the mouth, may in general be easily removed; but when of long standing, and extending down to the stomach and intestines, it very frequently proves fatal.

To evacuate the stomach of acidities or other acrimonious humors, it will be proper on the first appearance of aphthæ to give a gentle emetic.

If the child is of a costive habit, a little magnesia may be advised; on the contrary, if its bowels are rather loose, and its frame delicate, we may then substitute a weak infusion of bayberry sweetened with loaf sugar.

When the child of a weak habit is attacked with thrush which appears of a magignant nature, and which from its dark appearance threatens to terminate in gangrene, we should give a decoction of the bitter tonics and No. 6. To render its efficacy the more certain, it may likewise be used in the form of clyster.

In order to keep the infant's mouth clean and comfortable, and to prevent as much as possible any injury to the nurse, as well as to dispose the sloughs to fall off, and incline the parts underneath to heal, it is customary to make use of detergent applications in the form of gargles and lotions. In the gangrenous thrush it will be best to wash the parts frequently by means of a syringe, or a piece of soft linen rag rolled round the finger, with a strong decoction of bayberry and sage, sweetened with honey or loaf sugar.

If the aphthæ extend to the intestines, it may be advisable to sheath the parts by emollient clysters, repeating them twice or thrice a day.

When an excess of purging attends, the medicine advised under the head of Diarrhœa will be necessary.

*Prolapsus ani, or falling of the fundament.*—We often meet with this disease in children of a weak habit, or who have been much afflicted with severe purgings. It is also a frequent consequence of irritation in the rectum, arising from the nestling of ascarides in the gut.

In prolapsus ani, considerable advantages have been experienced from a frequent use of vegetable astringent injections, particularly of an infusion of oak-bark and bayberry. The same may be used as a wash to the protruded parts, after which they may be sprinkled with a little bayberry, powdered very fine, and then be reduced. To effect this, we should first order the protruded parts to be well fomented after which we are to make a gradual and general compression of the protruded gut, and thereby reduce it, and place it within the anus. In children it is often difficult to reduce the last folds if the finger is pushed through the orifice; for when it is again withdrawn, the gut slips down. We may, therefore, twist a piece of stiff paper into the form of a cone, soften the point by wetting it, and oil the surface: having done this, place it upon the point of the finger, and so push the last portion of the gut within the anus; the cone will slip out easily without bringing down the gut with it.

Another way of reducing the prolapsus is by using a piece of distended gut to push it up, and this distended gut may be pressed up altogether within the rectum, so as to replace it effectually. On letting out the air from the distended gut, it is readily to be brought out without the prolapsus following it.

The child should not be permitted to strain, nor take the usual position at stool. It should be kept in the erect posture, and his hips ought to be held together, so as to compress and support the gut.

With the view of strengthening the parts, the debility of which is in general to be considered as the chief cause of this disease, we should advise frequent styptic injections and the best tonic treatment.

*Atrophia ablactatorum, or weaning brash.*—This disease occurs in children that are weaned too early, or such as are attempted to be reared without the breast, and also where improper food is given with or without sucking. It appears most frequently in children of a lax fibre, and whose constitutions at a more advanced stage of life might be supposed liable to the attack of strumous disorders.

It commences with frequent griping and purging, in which the stools are usually of a green color, and is often accompanied with bilious vomiting. In the progress of the disease the stools are sometimes ash-colored and shining. Atrophy succeeds to these symptoms, and convulsions often come on, and carry off the child.

A modern writer supposes the exciting cause of this disease to be too sudden an alteration of the diet of a child at an unfit season.

The weaning brash, if attended to in time, may in general be removed; but if neglected, it frequently proves fatal before the sixth or seventh week.

A proper attention to diet constitutes the first point to be attended to for the removal of the disease; and, above all, a return to the natural food, the mother's milk, where circumstances will admit of it. Where they do not, animal food, in the form of broth or jelly, should princi-



pally be employed. Vegetable food must be prohibited, as well as fruits, acids, and compositions of which butter and sugar form a part. Pure air, exercise, gentle frictions, and frequent washings of the body with tepid or cold water, will be good prophylactics. Flannel worn next to the skin, worsted stockings, and every precaution against cold irregularly applied, should be attended to. The employment of a warm bath, of a temperature from 90 to 100, twice or thrice a week with the lobelia emetic will be most advantageous.

*Ophthalmia purulenta, or purulent ophthalmia.*—This disease is noticed under the head of an Inflammation of the Eyes.

*Teething.*—Of all the occurrences of which children are liable, not one is attended with such grievous and distressing symptoms as difficult dentition. With regard to the time of their cutting teeth, no fixed or exact period can be laid down, as some cut their first tooth at three or four months old, while others again have not the smallest appearance of a tooth before the eighth or ninth months. Dentition generally commences, however, in the majority of children, between the fifth and eighth month, and the process of the first teething commonly continues to the sixteenth at the least, but often much longer. The two fore-teeth, or dentes incisores of the under jaw, are those which usually appear first, and shortly after these are observed two more come out in the upper one, exactly opposite to the two former. These are succeeded by the four molares, then the canini, and the last of all, of an infant's first teeth, their antagonists, or the eye-teeth, making in all sixteen. This, it is well known, is the ordinary number of a child's first teeth, as they are called; but some infants cut four double teeth in each jaw instead of only two, making the whole number twenty.

In children who are healthy and strong, the process of dentition goes on as has just been described, and the teeth are cut soon and easily; but in unhealthy and weak infants, the process is both slow and uncertain. Accordingly, children sometimes cut their teeth irregularly, both by the teeth appearing first in the upper jaw, and also at some distance, instead of being contiguous to each other, which has been accounted, and with some reason, an indication of difficult or painful dentition. It may also be remarked, that the ease or difficulty of dentition may be guessed at by the circumstances under which the two first teeth shall happen to be cut, the succeeding ones generally making their way in a correspondent manner.

At six or seven years of age, all children shed their teeth in a gradual manner, and get a fresh set, and about the age of one-and-twenty four more come out, one in the corner of each jaw, which, from their appearing at that period of life, have been named dentes sapientiae or wisdom teeth.

Dentition is usually preceded by, or accompanied with, various symptoms: the child drivels; the gums swell, spread, and become hot: there is often a circumscribed redness in the cheeks, with eruptions on the skin, especially on the face and scalp; a looseness ensues with gripings, stools of a green, pale, or leaden blue color, sometimes mucus, and often thick; and the child is watchful and peevish, starts during sleep, and seems convulsed in particular parts of its body. In almost all cases

the child shrieks often, and thrusts its fingers into its mouth. These symptoms are sometimes followed by a cough, difficulty of breathing, scorfula, marasmus, and hydrocephalus, and very frequently by much febrile heat, thirst and convulsions.

When the child's body continues open, and none of the violent symptoms attendant on much irritation ensue, we need seldom apprehend any bad consequences from teething.

It has often been observed, that those children in whom there is a copious flow of saliva, suffer the fewest inconveniences during the process of dentition; that such infants cut their teeth more readily in winter than in summer; that such as are inclined to be lean cut them more easily than those that are fat; and those whose bowels are regularly open, the most safely of all.

The system during dentition being disposed to inflammation, strong lusty children are much oftener attacked with fever than the tender and delicate; like athletic adults, who are more disposed to inflammatory complaints than those who are of a colder, but less healthy temperament: and it is by acute fever or convulsions that infants are carried off, who are well known to survive various lingering and distressing complaints if their viscera are sound. The extremes of high health and of debility are both attended with some degree of danger; the one being exposed to acute fever or convulsions, the other to slow hectic or marasmus.

*Treatment.*—A due regard should be paid to the condition of the stomach and bowels at all times; if costive, which is sometimes the case, they should be liberated from their pressure, by gentle aperients and the aid of the syringe; but if there should exist too much looseness, or a diarrhoea, the dysenteric, tonic cordials will be proper.

When the gums have become tumid and swelled so as to excite a high degree of pain and febrile heat, instead of simple scarifications, an incision should be carried down to the tooth, so as also to divide the membrane which covers it. When the gums over the molares require to be divided, it will not be sufficient to make the incision merely in the direction of the jaw, but transverse ones must also be made, to set the tooth quite at liberty, so that in its further advance it may not irritate the gum again.

The practice of giving children coral and other hard substances to put into their mouths during the period of teething, is improper, as they have a tendency to harden the gums. A piece of small wax candle that will yield in some measure to whatever pressure is made upon it by the gums of the child, may be serviceable.

If acidity prevails during dentition, it is to be obviated by proportionate doses of magnesia or prepared chalk; and if accompanied by flatulency and griping pains, carminatives, such as carraway seeds, ginger tea—or a few drops of No. 6 may from time to time be given.

During dentition, children are sometimes troubled with ulcerated gums; but these may be easily cured by keeping the body open, and touching the parts affected with some astringent application. As much alum as will give a moderate roughness to a little honey, or a little soda sub-boras and honey, may be used.

Pure air, proper exercise, wholesome food, an open belly, and every thing that has a tendency to promote general health, and to guard against fever, will greatly contribute to the safety of dentition, as well as to the child's passing quickly through this hazardous period.

*Convulsions.*—Violent spasmodic affections sometimes attack infants without any apparent cause; but in general they are produced either by a lodgment of some acrid matter in the intestines, or wind pent up, or they arise from teething, worms, the sudden striking in of a rash, or the accession of some constitutional disease, as, for example, the small-pox, scarlatina, &c. Any trifling matter, capable of irritating the nervous system, will induce symptomatic convulsions in some infants; while others again will withstand a great deal. The younger and more irritable the infant is, the more liable will it be to symptomatic convulsion, especially from any considerable disturbance in the first passages.

In the treatment of convulsions in children, the chief object to be attended to is the removal, if possible, of the cause which has given rise to them.

In all cases of convulsions, the lobelia emetics will be most applicable; indeed they seem to possess most singular merit in controlling this distressing infantile affection.

Worms having been looked upon as a frequent cause of recurring convulsions, we should always have recourse to the remedies which have been advised under that particular head, when from the prevailing symptoms we suspect them to have been excited by this cause.

Where the fits are of some duration or frequent recurrence, a warm-bath at the temperature of 92 or 94 degrees of Fahrenheit's scale should be employed, and, if necessary, be often repeated: this, by diffusing the circulation more generally, and determining it to the surface of the body, may be highly useful.

Inward fits are much talked of by nurses, and some authors have indeed made mention of them; but more particularly Dr. Armstrong.—Infants, during the first month, are said to be more or less liable to them. The symptoms are these: the child appears as if it was asleep, but the eyelids are not quite closed; and if you observe them narrowly, you will see the eyes frequently twinkle with the white of them turned up.—There is a kind of tremulous motion in the muscles of the face and lips, which produces something like a simper or smile, and sometimes the appearance of a laugh. As the complaint increases, the infant's breath seems now and then to stop for a time; the nose becomes pinched; there is a pale circle about the eyes and mouth, which sometimes changes to livid, and comes and goes by turns; the child starts, especially if you stir it ever so gently, or if you make the least noise near it. Thus disturbed, it sighs or breaks wind, which gives relief for a while; but presently it relapses into dozing. Sometimes it struggles hard before it can break wind, and seems as if fulling into convulsions; but a violent burst of wind from the stomach, or vomiting, or a loud fit of crying, sets all to rights again.

For the removal of these a few drops of the tincture of lobelia will generally be sufficient.

# MATERIA MEDICA.

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By the term *Materia Medica*, we understand that part of medical science which treats of the nature, composition, and relation of the various substances which are employed in the prevention, cure, and mitigation of disease; and also the effect of such substances on the human body.

In its most comprehensive sense, it embraces all those substances which are capable of making sanative impressions on the human system; but, as the term is employed in the following pages, it has a more restricted signification.

We shall treat of medicines in the state only in which they are produced by nature; and of those medicines alone which may be found in our own country. The common saying, that every *country* contains the best cures for its own diseases, seems fully verified in North America. Hence, we can gather from our own fields and forests, both unadulterated and cheap, many of the most important articles used in the practice.

Many American gentlemen, of the finest genius, have explored the medical treasures of our own country, and have shown an eagerness to make known the precious means to preserve the health and lives of our citizens. First on the list of this band of philanthropists stands the immortal *Thomson*, who laid the foundation whereby millions of our worthy citizens may be rescued from an untimely death.

From the valuable discoveries and communications of this gentleman, we have compiled the following *Materia Medica*, exhibiting the *names*, *characters*, and *qualities* of the best medical plants hitherto discovered, together with the forms of disease they suit, making one of the most complete arrangements now extant.

The *botanic*, as well as the English, or vulgar names of plants being given, will enable the reader to find a description of such of them as he may choose in the works of Drs. Thomson, Howard, Barton, Rafinesque, Darby, and other botanists.

A few of the leading articles may be always kept on hand by heads of families, as it is not necessary that they should be supplied with the whole *Materia Medica*, as practicing physicians. We would by all means advise the reader to select and keep constantly on hand, such articles of medicine as will be necessary to prepare a sufficient supply of Dr. Thomson's *six numbers*.

We deem it proper to remark also, that roots should be gathered in the spring, before the sap begins to rise, or in the fall, after the top is dead or ripe. Bark may be stripped from the tree or shrub at any time of the year. The inside bark should only be used, after the exterior portion has been shaved off. Medicinal plants should be gathered while in



blossom; their virtues, however, are not essentially diminished until they begin to wither. Seeds should be gathered when fully ripe.

All medicinal vegetables should be dried in the shade, and great care taken that they do not ferment or mould; when thoroughly dried, they should be kept close from the air.

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### AGRIMONIA—AGRIMONY.

THIS plant grows about three feet high, in hedges and the margins of fields—blossoms in July. It is known by the vulgar name of *cuckold*, from the seeds sticking to the clothes in the fall of the year. A tea made of the leaves is a very good drink in all febrile affections. The juice of the plant or a strong infusion of the roots, sweetened with honey, is an excellent medicine in jaundice, scurvy, and chronic diarrhœa; taken in wine-glassful doses three times a day. It is a mild astringent tonic and may be used in all cases where such medicines are required.

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### ALNUS NIGRA—ALDER BLACK.

THIS is also called Virginia Winterberry, grows in moist places, sending up several slender stalks, some ten feet in height, and bears a red juicy berry.

This is a very excellent article used in substance, or a strong decoction, in intermittents, and all other cases where an excellent tonic is required.

A poultice made of the inner bark is said to be of admirable use in arresting the progress of mortification. Botanic practitioners would do well to apply this remedy, and mark well its effects.

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### ALETRIS FARINOSA—STARGRASS, BLAZING STAR, UNICORN ROOT.

THE root perennial, small, branched, crooked, blackish outside and brown within. Leaves six to twelve, unequal and withered at the tips; flowers white or yellow. It is found in all parts of the United States, preferring poor, dry soils and open situations. The root is only used.

This article is an excellent bitter tonic; given in small doses, strengthens the appetite and promotes digestion; but in large doses (a tea-spoonful of the powder) it is apt to vomit. It would be proper to administer this article in half tea-spoonful doses, three or four times a day, in all cases of general debility, or loss of appetite, colics, rheumatisms, &c.

The stargrass may be given in tincture, decoction, or substance, though the first or last form is undoubtedly the best. It can also be prepared in cordials or syrups.

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### AMARANTUS HYPOCHONDRIACUS—AMARANTH.

THE amaranth is an annual plant, well known, being cultivated in gardens for its peculiar beauty. It is an astringent, and the leaves may be used in all cases where such remedies are required; but more particularly is this plant useful in bowel complaints. It is also a good remedy for profuse menstruation, and has often cured when the common remedies have failed.

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### AMOMUM ZINGIBER—GINGER.

RACE is the term applied to ginger in the root to distinguish it from that which is ground. The race ginger is much stronger generally than the ground; as the latter is often adulterated, and frequently prepared from such roots as are worm-eaten and unsaleable.

Ginger is a warm and stimulating aromatic of very great value in medicine. It is used in combination with other articles mostly, but is much used alone. It is an important ingredient in the composition powders, as well as many other valuable preparations. It is used also externally in poultices.

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### AMIGDALUS PERSICA—PEACH TREE.

THE bark, leaves, blossoms, kernels, and gum, are all highly valuable in medicine. The bark, leaves, or flowers, may be given in tea or syrup, are an excellent purgative, and may be given to young or old; useful in almost all forms of disease. A decoction of the leaves, tolerably strong, may be administered in tea-spoonful doses every hour to children until it operates, and in larger quantities to grown persons.

A syrup made of the blossoms and honey is the very best article that we have ever used for summer complaints among children. The same preparation is doubtless very good for worms, colic, gravel, &c.

The peach kernels is an admirable tonic; and combined with other articles they stand very high as a stomachic. Those who are acquainted with Dr. Thomson's No. 5, and have witnessed its good effects, cannot fail to appreciate highly this valuable remedy; peach kernels being the principal article in this noble preparation.

As an external application to inflammations, the leaves bruised and boiled and employed as a fomentation, or thickened with bran as a poultice, and often renewed, are said to be good.

The gum is said to answer all the purposes of Gum Arabic, and in many instances it is unquestionably superior.

## ANETHUM FENICULUM—FENNEL.

FENNEL is a perennial plant, grows spontaneous in some parts of the United States, but it is mostly cultivated in gardens. The seeds are a good aromatic; as such are useful in bitters and a variety of compounds. They yield an excellent oil which is good in flatulency; and is also a diuretic.

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## ANGELICA ATRÖPURPUREA—WILD ANGELICA,

GROWS in marshy woods and hedges, flowering in June and July; from three to five feet in height. Every part of this useful vegetable partakes of its aromatic virtue, but particularly the root, which in form of powder, tincture, or tea, is useful in flatulent colics. Conjoined with tonics, it may be used with advantage in all cases of great debility. It is a very grateful aromatic, stimulant, and stomachic medicine. A decoction of the roots, combined with any strong astringent medicine, makes an admirable gargle.

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ANTHEMIS GOTULA—DOG FENNEL, MAYWEED, WILD  
CHAMOMILE.

THIS weed grows in every part of the United States, near houses, along roads, walks, and old fields; and is too well known to need further description: As a domestic medicine it has long been used with considerable advantage. It is reputed very good as a tonic, sudorific, anodyne, and emetic. It is very useful in all complaints, where any of the above remedies are required. In hysteria it is said to be particularly beneficial, as well as in rheumatism.

It should be given in tea when taking an emetic, and is much better than warm water to promote vomiting. When taken warm in small doses, it never fails to act as a sudorific, promoting copious perspiration. The herb and flowers are externally used in fomentations for bruises, piles, hysteric fits and pains. It is a species of chamomile for which it may on all occasions be substituted. As the flowers are the least unpleasant they may be used internally, instead of the leaves or any other part.

## ANTHEMIS NOBILIS—CHAMOMILE.

THIS common herb is said to be a native of South England, but is now cultivated in almost every garden in the United States for the purpose of medicine. The flowers are mostly used. They are very bitter, and have a nauseous taste. The chamomile is used in all spasmodic affections, hysterics, colics, cramps, vomitings, &c.

The whole plant bruised and wet with vinegar is an excellent remedy for bruises, strains, and swellings. It makes a very valuable relaxing ointment, which is applied to hard swellings, corns, callouses, shrunk sinews, &c., &c. Scarcely any little plant possesses more valuable medicinal properties than chamomile; and none has been more neglected.

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## APIUM PETROSELINUM—PARSLEY.

THIS well known vegetable is cultivated for culinary purposes; and it is highly valuable as a medicine. It is an active diuretic and may be used in dropsy and all ordinary suppressions of urine, as well as in kidney affections and the various affections of the urinary organs. The root made into a tea or decoction, is the part most generally used for medicinal purposes. Several cases of dropsy of the abdomen have been cured by the use of parsley alone.

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## APOCYNUM ANDROSEMIFOLIUM—BITTER-ROOT.

THE bark of the root alone is used for medical purposes. Notwithstanding many botanic practitioners have entirely dispensed with bitter-root in practice; declaring it to be too drastic in its operation, it is still a very important medicine and highly recommended by us. To restore digestion, correct the bile, and dislodge the contents of the bowels in a mild manner, it is surpassed by no single article in the whole *Materia Medica*. It acts as an emetic, aperient, and powerful tonic; being immensely bitter. As an alterative it ranks very high and must be regarded as one of the best deobstruents.

If given in large doses it produces a laxative effect upon the bowels, and used in this manner in the commencement of a fever, will often remove the morbid cause and save the patient much suffering. When given in too large doses it operates as an emetic, and it is said sometimes its operation is very severe, and even dangerous. By the Indians it is employed in venereal forms of disease, and it is considered by them as a specific. A tincture prepared with Holland gin is a powerful antidote in dropsical affections.

A wash made of the root is said to be good for ulcers, scalled head, &c. It enters into many of our most valuable compounds; and we doubt whether any practitioner acquainted with its medicinal properties, can get his own consent to abandon its use.



## APOCYNUM CANABINUM—INDIAN HEMP.

THE Indian hemp is an emetic, cathartic, expectorant, diaphoretic and diuretic. The root is only used in decoction—half an ounce of powdered root steeped in a pint of boiling water, of which three table-spoonsful are taken three times a day and oftener, if necessary. It is found very useful in dropsy, pulmonary affections, and habitual costiveness. It resembles very much the bitter-root, and the superficial observer is apt to mistake Indian hemp for bitter-root, and often confound them together.

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## ARABIA NUDICAULIS—SMALL SPIKENARD.

SPIKENARD may be found in any part of the United States; more common in the North than South; grows in good soils and thick woods. It has a very fine aromatic balsamic taste. The roots and berries are most efficient. They are healing, pectoral, sudorific, stimulant, and diaphoretic. A poultice made of the bruised roots is an excellent remedy for bruises, wounds, ulcers, &c. Fomentations and cataplasms are useful in all cutaneous affections, especially erysipelas and ring-worms. The roots and berries may be used in syrups, cordials, decoctions, &c., as a pectoral, and will be found valuable in all diseases in the breast, particularly coughs, colds, catarrh, cachexia, languor, and pains in the breast. Spikenard is also a sufficient substitute for sarsaparilla; and it is thought to be a much better remedy in all diseases of the blood, syphilitic complaints, &c.

The cordial of spikenard is highly recommended for the gout and chronic rheumatism, and the juice or oil for earache and deafness.

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## ARABIA RACEMOSA—SPIKENARD.

This is also called Wild Liquorice, and by some Spignet. The roots and berries are the parts used as medicine; and are popular remedies for coughs, female debility, and as a valuable tonic. It possesses similar properties to those of the small spikenard, and may be used in all cases where that article cannot be procured.

A pint of the berries steeped in a quart of Malaga wine, taken in wine-glassful doses is said to be a certain cure for pains in the stomach. The root in the form of infusion is found to be very efficacious in gouty complaints. The fresh roots applied in form of poultice are excellent for wounds or ulcers.

## ARABIA SPINOSA, XANTHOXYLUM FRAXINEUM— PRICKLY ASH.

THE prickly ash is a shrub from five to fifteen feet in height, with alternate branches which are covered with sharp, strong, scattered prickles. The common foot-stalk, or body, is sometimes prickly on the bark, and sometimes unarmed. The bark is thin and externally yellowish; white internally; taste warm and aromatic, exciting a copious discharge of saliva; the berries grow in clusters on the top of the branches; are small, black, or deep blue, enclosed in a grey shell. The bark and berries only, used as medicine. It enjoys a considerable reputation among botanic practitioners and is no doubt a very valuable addition to the botanic practice. As a remedy in chronic rheumatism, it has stood very high for a great while.

The bark is an energetic stimulant, producing when swallowed, a sense of heat in the stomach, with more or less general arterial excitement, and tendency to diaphoresis. The berries are a good tonic and aperient, and are used in dyspepsia. The pulverised bark in decoction or infusion is the most effectual remedy we have ever used for removing nocturnal pains, and disposing venereal ulcers to heal. It has also been employed with success in paralytic affections, venereal diseases, colics, cramps, &c. And in old phlegmatic habits, chronic or acute rheumatisms, xanthoxylum may be relied on with the utmost confidence.

The powdered bark has been employed as a topical irritant; and is a popular remedy for toothache.

## ARCTIUM LAPPA—BURDOCK,

GROWS on the road side, on rubbish and ditch banks, bearing purplish blossoms in July and August.

The root is considered aperient, diaphoretic, and sudorific, without irritating properties; and has been used with advantage in gouty, scorbutic, venereal, rheumatic, scrofulous, leprous, and nephritic affections. Combined with lobelia they form one of the most powerful diaphoretic medicines we know of. To prove effectual its use must be persevered in for a long time, as its operation is slow. It is best administered in the form of decoction, which may be prepared by boiling two ounces of the recent bruised root in two or three pints of water for a half an hour, and give the patient a pint during the day.

The seeds are diuretic and have been used in the foregoing complaints in the form of emulsion or powder. The roots have been employed both externally and internally in cutaneous eruptions and ulcerations.

The juice of the leaves is frequently given in doses of a wine-glassful three times a day in rheumatism, venereal complaints, &c.

## ARISTOLOCHIA SERPENTARIA—VIRGINIA SNAKEROOT.

THE root of this herb as it is generally found, is in tufts of long, slender, frequently interlaced and brittle fibres, attached to a short, contorted knotty head or caudex. The color, which in a recent state is yellowish, becomes brown by time. It grows in shady places, and abounds in all parts of the United States.

Snakeroot is a stimulant tonic, acting also as a diaphoretic or diuretic, according to the mode of its application. It is used to a great extent in typhoid fevers, by the old school doctors, and in other forms of fever when they have employed depleting agents and reduced the system very low. It is sometimes employed in dyspepsia, and as a gargle in malignant sore throat.

ARUM TRIPHYLLUM—INDIAN TURNIP, WAKE ROBIN,  
DRAGON-ROOT.

WAKE ROBIN may be found in all parts of the United States, growing in damp woods, in swamps, along ditches, and in other moist, shady places. All parts of it are highly acrid, but the root only is officinal.—This is roundish, flattened, an inch or two in diameter, and internally white, fleshy, and solid. The root loses nearly all its acrimony by drying, and becomes quite inert. For medicinal use it should be kept under ground, and only taken up as it is immediately needed. It may be kept for more than a year by burying it in the sand.

Indian turnip in its recent state is a powerful local irritant, possessing the property of stimulating the secretions, particularly those of the skin and lungs. It has been advantageously given in asthma, consumption, chronic catarrh, chronic rheumatism, and various affections connected with a cachectic state of the system.

The powder made into a paste with honey or syrup, and placed on the tongue in small quantities, is said to have proved useful in the sore mouth of children.

ASARUM CANADENSE—CANADA SNAKEROOT, COLTS-  
FOOT, WILD GINGER.

THE Canada snakeroot, or wild ginger, is an indigenous plant, inhabiting woods and shady places from Canada to Louisiana. Its flowering period is from April to July. All parts of the plant have a greatful aromatic odor, which is most powerful in the root. This is the officinal portion. As it is seen in shops, it is in long, more or less contorted pieces of a thickness from a straw to a goosequill, brownish and wrinkled externally, whitish within, hard and brittle, and frequently furnished

with short fibres. Its taste is an agreeable aromatic and slightly bitter; and it is said to be a good substitute for ginger, as it acts as a warm aromatic and diaphoretic. It would form an elegant adjuvant to tonic infusions and decoctions. It may be given in powder or tincture. The dried leaves reduced to powder make an excellent snuff, which may be used in all complaints of the eyes.

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### ASCLEPIAS SYRIACA—MILK-WEED, SILKWEED.

From the abundance of its milky juice this has also been called *milk-weed*. The leaves are spear or tongue-shaped, and in August its reddish or purplish blossoms are exhibited at the extremities of the branches. The stalk of this species is from three to six feet high, the leaves large, standing on short foot-stalks. A milky juice exudes from the stem or leaf when broken. The root, as soon as it penetrates the earth, shoots off horizontally and often sends out other stalks.

The root of milk-weed appears to possess the same properties as the butterfly root, but its powers are not so strong. It may be used for the same purposes and in the same manner. The root is no doubt possessed of anodyne properties. It may be given with advantage to an asthmatic patient, and in cases of typhus fever attended with catarrh. In both cases it will promote expectoration, relieve the pain and cough.

Dr. Smith observes, "the root has lately been found effectual in dropsy. It is a powerful diuretic, sudorific, emenagogue," &c. The roots tinctured in gin, may be used with great advantage in dropsy, gravel, gonorrhœa, &c.

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### ASCLEPIAS TUBEROSA—PLEURISY-ROOT, BUTTER-FLY-WEED, WHITE-ROOT, &c.

This is one of our most beautiful perennial plants, flourishing best in a light, sandy soil, by the way-side, under fences, and near old stumps in rye-fields, &c. It abounds in the southern States. There are sometimes fifteen or twenty, or more stalks, the size of a pipe-stem, proceeding from one root, rising from one to two feet in height and spreading to a considerable extent, generally in a decumbent position. The stalks are round and woolly, of a reddish brown color on the sun-side; the leaves stand irregularly, and are spear, or tongue-shaped, with a short foot-stalk, and covered with a fine down on the under surface. The umbels are compact at the extremities of the branches, and formed like the common silkweed, but differing from it in the color of the flowers, being of a beautiful bright orange color, while those of the silkweed are of a pale purplish hue. The flowers appear in July and August, and are distinguished by their size and brilliancy from all the flowers of the field. These are succeeded by long slender pods, containing the seeds,



which have a delicate kind of silk attached to them. This is probably the only variety of *asclepias* that is destitute of a milky juice. The root is spindle, or carrot-shape, of a light brownish color on the outer surface, white, coarse, and striated within. It has long been celebrated in Virginia and the Carolinas, as a remedy in pleurisy, and in pneumonic affections in general. It is said to display a remarkable power of affecting the skin, inducing general and plentiful perspiration without heating the body. In the form of decoction it often induces a diaphoresis when other medicines have failed to produce that effect. The powdered root frequently acts as a mild purgative, but it is particularly valuable for its virtues as an expectorant, diaphoretic, and febrifuge, and, in this respect, its efficacy is amply confirmed by the testimony of Dr. Benjamin Parker, of Bradford, Massachusetts, from his own observation, during an extensive practice of twenty-five years. In pneumonic fevers, recent colds, catarrhs, and diseases of the breast in general, this remedy has, in his hands, proved equally efficacious. He directs it to be given in the form of strong infusion, a tea-cupful every two or three hours. By many families in the country this root has long been esteemed as a domestic medicine, and resorted to for the relief of pains of the stomach from flatulence, and indigestion, hence the vulgar name of *wind root*, by which it is known in some parts of the country, and from its color it is by some called white root. As a diaphoretic, other practitioners speak of it in a manner equally favorable.

Dr. Bigelow has given an engraving of this plant in his Medical Botany, and very fully detailed all the information possessed respecting it.

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### ALTHÆA ROSEA—HOLLYHOCK.

This plant is cultivated in gardens for its singular beauty, as well as for its medical properties. The roots should be collected in autumn from plants at least two years old. Both the leaves and the roots are officinal, but the latter is only employed to any extent in the botanic practice. The flowers are sometimes found in shops, but scarcely used. A tea of the flowers is said to be good in inflammation of the mucous membrane, or soreness of any part of the alimentary canal. The virtues of hollyhock are exclusively those of a demulcent. The decoction of the roots is also much used in irritation or inflammation of mucous membranes. The roots themselves are often employed as a poultice. The leaves are also applied to similar uses. The flowers also form the mucilaginous part of the conserve of hollyhock, or bread of life. The leaves pulverised may be substituted for slippery elm in poultices.

## ARTEMISIA ABSINTHIUM—WORMWOOD.

Wormwood enjoys some reputation in medicine. Notwithstanding it is known among our garden herbs, it is a native of Europe where it is extensively cultivated for medical use. It is highly tonic, and has enjoyed great reputation as a remedy in numerous complaints, attended with a debilitated condition of the digestive organs, or of the system generally. Before the introduction of Peruvian bark, it was much used in the treatment of intermittents. It has also been supposed to possess anthelmintic virtues. At present it is very little used in practice, as it is thought it possesses a narcotic property, in consequence of its tendency to occasion headache, and when long continued, to produce disorder of the nervous system. This property is supposed to depend on the volatile oil, and therefore to be less obvious in the decoction than in the powder or infusion. The herb is sometimes applied externally, by way of fomentation, as an antiseptic and discutient. It is used in very small quantities.

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 ALLIUM SATIVUM—GARLIC.

GARLIC, though a native of Sicily, is cultivated to some extent in our gardens. The roots consist of five or six small bulks, called *cloves*, enclosed in one common membranous coat, but easily separated from each other. The root is mostly used, but the top may be used with much advantage. Applied externally, it acts successively as a stimulant, rubefacient, and blister. Internally, from its very powerful and diffusible stimulus, it is often useful in diseases of languid circulation and interrupted secretion. Hence in cold, leucophlematic habits, it proves a powerful expectorant, diuretic, and, if the patient is kept warm, sudorific: it has also been by some supposed to be emmenagogue. For the same reason, in cases in which a phlogistic diathesis, or other irritability prevails, large doses of it may be very hurtful.

It is sometimes used by the lower classes as a condiment, and also enters as an ingredient into many of the epicure's most favorite sauces. Taken in moderation, it promotes digestion; but in excess, it is apt to produce headache, flatulence, thirst, febrile heat, and inflammatory diseases, and sometimes occasions a discharge of blood from the hæmorrhoidal vessels.

In fevers of the typhoid type, and even in the plague itself, its virtues have been much celebrated.

Garlic is with some also a favorite remedy in the cure of intermittents; and it has been said to have sometimes succeeded in obstinate quartans, after the Peruvian bark had failed. In catarrhal disorders of the breast; asthma, both pituitous and spasmodic; flatulent colics; hysterical and other diseases, proceeding from laxity of the solids, it has generally good effects: it has likewise been found serviceable in some hydropic cases. Sydenham relates, that he has known the dropsy cured by the use of garlic alone; he recommends it chiefly as a warm strengthening medicine in the beginning of the disease.

It is much recommended by some as an anthelmintic, and has been frequently applied with success externally, as a stimulant to indolent tumors, in cases of deafness proceeding from atony or rheumatism, and in retention of urine, arising from debility of the bladder.

Garlic may be either exhibited in substance, and in this way several cloves may be taken at a time without inconvenience, or the cloves cut into slices, may be swallowed without chewing. This is the common mode of exhibiting it for the cure of intermittents.

The expressed juice, when given internally, must be rendered as palatable as possible by the addition of sugar and lemon juice. In deafness, cotton moistened with the juice is introduced within the ear, and the application renewed five or six times in one day.

Infusions in spirit, wine, vinegar, and water, although containing the whole of its virtues, are so acrimonious, as to be unfit for general use; and yet an infusion of an ounce of bruised garlic in a pound of milk, was the mode in which Rosentein exhibited it to children afflicted with worms.

By far the most commodious form for administering garlic is that of a pill or bolus joined with some powder, corresponding with the intention of giving the garlic. It may also sometimes be exhibited with advantage in the form of a clyster.

Garlic made into an ointment with oils, &c. and applied externally, is said to resolve and discuss indolent tumors, and has been by some greatly esteemed in cutaneous diseases. It has likewise sometimes been employed as a repellent. When applied under the form of a poultice to the pubes, it has sometimes proved effectual in producing a discharge of urine, when retention has arisen from a want of due action in the bladder. Sydenham assures us that among all the substances which occasion a derivation or revulsion from the head, none operate more powerfully than garlic applied to the soles of the feet; he was led to make use of it in the confluent small-pox: about the eighth day after the face began to swell, the root cut in pieces and tied in a linen cloth, was applied to the soles, and renewed once a day till all danger was over.

The most powerful antidotes to the flavor of this tribe of vegetables, are the aromatic leaves and seeds of the *umbelliferae*; thus the disagreeable odor of a person's breath after the ingestion of an onion, is best counteracted by parsley; and if leek or garlic be mixed with a combination of aromatic ingredients, its virulence will be greatly mitigated and corrected.

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### ALLIUM CEPA—ONION.

This is also a perennial bulbous-rooted plant. The root is a simple bulb, formed of concentric circles. It possesses in general the same properties as the garlic, but in a much weaker degree. Neumann extracted from 450 parts of the dry root, by means of alcohol 360, and then by water 30; by water applied first, 395, and then by alcohol 30; the first residuum weighed 56, and the second 64. By distillation the whole flavor of the onions passed over, but no oil could be obtained.

Wiegleb says, that all this class of vegetables, as well as the acrid cruciform, owe their acrimony to a subtle essential oil, and that they contain combined ammonia, which can be obtained by distillation with a solution of potash. Vauquelin ascribes its acrimony to volatile oil combined with sulphur, and its sweetness to uncrystallizable sugar with mucus, gluten, and animo-vegetable matter.

*Medical uses.*—Onions are considered rather as articles of food than of medicine: they are supposed to yield little or no nourishment, and when eaten liberally, produce flatulencies, occasion thirst, headaches, and turbulent dreams; in cold phlegmatic habits, where viscid mucus abounds, they doubtless have their use; as by their stimulating quality they tend to excite appetite, and promote the secretions; by some they are strongly recommended in suppressions of urine, in dropsies, and calculous affections.

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### ALLIUM PORRUM—LEEK.

THE common leek is rather an article of materia alimentaria, than of the Materia Medica. In its properties it is analogous to garlic, but weaker even than the common onion. A decoction of the beads or filaments of the bulbs is supposed by the vulgar to be lithontriptic.

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### AMYRIS KATAF, MYRRHA—GUM MYRRH.

THOUGH myrrh has been employed from the earliest periods of history, the plant which yields it has not been certainly known till a very recent period. The *Amyris Kataf* of Forskhal, seen by that traveller in Arabia, was supposed by him to be the myrrh tree, but without sufficient evidence. More recently Ehrenberg, a German traveller, met on the frontiers of Arabia Felix with a plant, from the bark of which he collected a gum-resin precisely similar to the myrrh of commerce. From specimens of the plant taken by Ehrenberg to Germany, Nees of Esenbeck referred it to the genus *Balsamodendron* of Kunth, and named it *Balsamodendron Myrrha*. This genus was formed by Kunth from the *Amyris*, and includes the *Amyris Kataf* of Forskhal, which may possibly also produce a variety of myrrh. The new genus differs from the *Amyris*, chiefly in having the stamens beneath instead of upon the germ. It is not thought by De Condolle sufficiently distinct.

*Amyris.*—This is a small tree, with stunted trunk, covered with a whitish-gray bark, and furnished with rough abortive branches terminating in spines. The leaves are ternate, consisting of obovate, blunt, smooth, obtusely denticulate leaflets, of which two lateral are much smaller than that at the end. The fruit is oval lanceolate, pointed, longitudinally furrowed, of a brown color, and surrounded at its base by the persistent calyx. The tree grows in Arabia Felix, in the neighborhood of Gison, in dwarfish thickets, interspersed among the *Acaciæ* and



*Euphorbia*. The juice exudes spontaneously, and concretes upon the bark.

Two varieties of myrrh are distinguished in the market—the *India* and the *Turkey myrrh*—the former imported from the East Indies, the latter from the Levant. It is said that the India myrrh is collected in Abyssinia, and thence taken to the ports of Hindostan, while that which goes under the name of Turkey myrrh, is brought from Arabia by the route of Egypt.

*Properties*.—Myrrh is in small irregular fragments somewhat like tears, or in larger masses composed apparently of agglutinated portions differing somewhat in their shade of color. When of good quality, it is reddish-yellow and translucent, of a strong peculiar somewhat fragrant odor, and a bitter aromatic taste. It is brittle and pulverizable, presenting, when broken, a shining surface, which in the larger masses is very irregular. Under the teeth it is at first friable, but soon softens and becomes adhesive. It is inflammable, but does not burn vigorously; and is not fusible by heat. Its specific gravity is stated 1.36. Turkey myrrh, to the best of which the above description is applicable, generally much excels in quality that imported from the East Indies. The latter is much darker, more opaque, less odorous, and often abounds with impurities. We have seen pieces of India myrrh enclosing large crystals of common salt, as if the juice might have fallen from the tree and concreted upon the ground, where this mineral abounds. Is not this fact confirmatory of the statement, that the India myrrh is partly at least brought originally from Abyssinia, where we know that salt exists abundantly in some places upon the surface of the earth?

Myrrh is partially soluble in water, alcohol, and ether. Triturated with water it forms an opaque yellowish solution, which deposits the larger portion of the myrrh upon standing. The alcoholic tincture is rendered opaque by the addition of water, but throws down no precipitate. According to Neumann, alcohol and water severally extract the whole of its odor and taste. By distillation a volatile oil rises, having the peculiar flavor of myrrh, and leaving the residue in the retort simply bitter. The gum-resin is soluble in the liquid alkalies, and when triturated with them in a crystalline state forms a tenacious liquid. Braconot found 23 parts of an odorous bitter resin, and 77 of a peculiar gummy substance in the hundred. Pelletier gives as the result of his analysis, 34 per cent. of resin, with a small proportion of volatile oil, and 66 per cent. of gum. According to Brandes, it contains in one hundred parts, 2.60 of volatile oil, 22.24 of a soft, bitter resin, soluble in ether, 5.56 of a tasteless resin, insoluble in ether, 54.38 of gum with traces of various salts, 9.20 of tragacanthin (bassorin,) besides salts of potassa and lime, water, and impurities.

*Medical properties and uses*.—Myrrh is a stimulant tonic, with some tendency to the lungs, and perhaps to the uterus. Hence it is employed as an expectorant and emmenagogue, in debilitated states of the system, in the absence of febrile excitement or acute inflammation. The complaints in which it is usually administered are chronic catarrh, phthisis pulmonalis, humoral asthma, other pectoral affections in which the secretion of mucus is abundant but not easily expectorated, chlorosis, amenor-

rhœa, and the various affections connected with this state of the uterine function. It is generally given combined with tonics. It is used also as a local application to spongy gums, the aphthous sore mouth of children, and various kinds of unhealthy ulcers. The dose is from ten to thirty grains, and may be given in the form of powder or pill, or suspended in water. The watery infusion is also sometimes given, and an aqueous extract has been recommended as milder than the medicine in substance. The tincture is used chiefly as an external application. It also enters into that popular medicine known as Dr. Thomson's No. 6. One pound of myrrh to the gallon of alcohol, and the other ingredients.

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### ACORUS CALIMUS—CALIMUS, SWEET FLAG.

ACORUS CALIMUS grows in wet, marshy places, and may be known by the long sword-shaped leaves, resembling those of the blue and yellow flags, but narrower and of a brighter green. The root is like that of the blue flag in appearance, but has a strong aromatic smell, and a warm pungent taste. The flavor is greatly improved by drying.

The root possesses stomachic virtues, and is frequently grated into water, and given to children for flatulent colics. It is often used as an ingredient with dogwood bark, cherrytree bark, centaury, &c. in morning bitters, as a preventive of the ague in low, marshy situations.

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### BAPTISIA TINCTORIA—WILD INDIGO, INDIGO WEED, HORSEFLY WEED, INDIGO BROOM,

GROWS from one to three feet high, with smooth, branching stem; growing abundantly in uplands; flowers in July and August, and like the whole plant become black when dried. The leaves and root may be used for medicinal purposes, but the latter is the part which is the most highly recommended. If administered in large doses it proves both emetic and cathartic. But it is not esteemed highly for this purpose, as it is too powerful in its operation. Internally in decoction, it is said to be an excellent antiseptic, and may be given freely in mortification and putrid complaints. It is said to have proved useful in scarlatina, typhus fever, &c. Internally it must be used with much caution, as there is danger of inducing immoderate discharges from the bowels. It is spoken highly of, by some botanic physicians, as an external application to obstinate and painful ulcers. It may be used externally in the form of decoction or of cataplasm. It may also be made into an ointment with lard or cream. The leaves and roots are sometimes applied in poultice to swelled female breasts; and in putrid sore throat it is highly recommended.

## BERBERIS VULGARIS—BARBERRY.

The barberry is a shrub, growing from four to eight feet high, with long branches covered with many small dots, and some occasional thorns, often three together. Found in mountains, hills, and amongst rocks in hills, &c. The berries grow in bunches, are oblong, and of a red color, have a grateful sour, astringent taste. They are refrigerant, astringent, and antiscorbutic, and sometimes used in form of drink, in febrile forms of disease, and diarrhoeas. An agreeable syrup is sometimes prepared from the juice, and the berries themselves are sometimes preserved for table use. The inner bark of the root is a good bitter tonic, slightly astringent, and may be employed beneficially in jaundice, fevers, dysentery, and generally in all cases of disease, either alone or combined with other tonics.

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## BETULA LENTA—BLACK BIRCH, SWEET BIRCH.

This tree needs no sort of description, as it is known by almost every farmer in the United States. It is remarkable for the aromatic flavor of its leaves and bark. Both are used in infusion as an agreeable, gently stimulant, and diaphoretic drink. It is very good to restore the strength and tone of the bowels after dysentery. It is also said to be good in gravel, and to remove female obstructions.

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## CAPSICUM ANNUUM—CAYENNE PEPPER.

This important article so extensively used in the practice of medicine, and for table uses, needs no description in this place.

Cayenne is one of the most pure, powerful, and permanent stimulants that is now known to the medical world. It has been doubtless used to some extent for a great while by physicians of the old school, but to Dr. Samuel Thomson belongs the everlasting honor of introducing it into the practice as a stimulant, admissible in all forms of disease, and so far superior and so much more efficacious, that the various articles hitherto used for that purpose, may be entirely dispensed with. Cayenne pepper is the most important article in the Thomsonian practice of medicine, as it enters into almost all of our compounds, and is extensively and advantageously used as an external application in every form of disease requiring external remedies.

Rafinesque says, that Cayenne "produces fever, inflammation, obstructions," &c. This, however, is altogether a mistake, founded on popular error. Had the writer been well acquainted with its medicinal properties, he never could have so libeled the character of cayenne.—This popular opinion from which this error originated is, however, fast wearing away, and the more rational views of medicine and medical philosophy occupying its place.

There is no doubt but that cayenne furnishes us with the purest and strongest stimulant that can be introduced into the stomach; while, at the same time, it has nothing of the narcotic effects of alcohol or opium. In many forms of disease cayenne is considered a specific—such as malignant sore throats, scarlet fever, &c. In conjunction with other means, it removes obstructions wheresoever seated in the human system. This assertion is confirmed by the experience of every botanic physician in the land, and with all the confidence which actual observation, experience, and a knowledge of the facts can inspire, we cordially and unhesitatingly recommend it to the sick.

Applied externally, cayenne is a powerful rubefacient, very useful in chronic rheumatism, and in low forms of disease where stimulant impressions upon the surface are demanded. It has the advantage, under these circumstances, of acting speedily without endangering vesication or blisters. It may be applied in the form of cataplasm, and very conveniently and efficiently as a lotion mixed with heated vinegar or spirit.—The powder or tincture, brought in contact with a relaxed uvula, acts very beneficially.

The powdered capsicum slightly dusted in stockings of persons subject to *cold feet* will generally prove a salutary means of overpowering the unpleasant sensation.

Cayenne is often adulterated, and sometimes very bad consequences arise from its use; and we hereby charge practitioners, and all others, to be exceedingly careful of whom they purchase. *Red lead* may be detected in it by digesting it in *acetic acid* and adding to the solution sulphuret of ammonia, if lead is present, a dark colored precipitate is produced; or boil some of the suspected pepper in vinegar, filter the solution, and add sulphate of soda; a white precipitate of sulphate of lead is formed, which, dried and exposed with a little charcoal, will yield a metallic globule of lead.

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### CYPRIPEDIUM—LADIES' SLIPPER.

Of this plant there are four varieties; the red or purple; the yellow; the white; and the gay or tall ladies' slipper.

These four species grow in every section of the United States; the red is found in the greatest abundance. It has received the names also of dwarf umbil, American valerian, Noah's-ark, moccasin flower, and nervine; it generally prefers shady grounds. The different varieties possess similar properties and is what is commonly known by the name of nerve powder in the botanic shops.

Its exhibition in all cases where an anodyne effect is desired, is generally acknowledged beneficial.

It may be taken in substance, or infusion. Of the finely pulverised powder, a small tea spoonful is a medium dose. Perhaps the best method of taking it, is in sweetened cold water. Boiling water and a long exposure to the atmosphere impairs its properties.



## CARBO—CHARCOAL.

THE Paris Codex directs the preparation of charcoal for medical use to be conducted as follows. Take any quantity of thoroughly burnt charcoal, very light, sonorous, and pure, made from the wood of the linden-tree, willow, poplar, or some other of the lighter woods, and moisten it with water. Reduce it to powder in an iron mortar, or by means of a mill; and having mixed it with water to form a thin fluid mass, let it stand for a few days; after which, place it on a linen cloth to drain. Make up the paste into round cakes, and expose them the rays of the sun until they are thoroughly dried. By this process of insolation, the charcoal is stated in the Codex to be completely deprived of all adventitious color and smell, and to be singularly improved in efficiency; advantages which are not equally obtained, when it is dried in the shade.

Charcoal is a black, shining, brittle, porous substance, tasteless and inodorous, and insoluble in water. It is a good conductor of electricity, but a bad one of heat. In masses, it floats in water; but when reduced to a fine powder, whereby its porosity is destroyed, it sinks in that liquid. It possesses the remarkable property of absorbing many times its own bulk of certain gases, provided it be perfectly dry. When exposed to the air after ignition, it increases rapidly in weight, absorbing from twelve to fourteen per cent. of moisture. As ordinarily prepared, it contains the incombustible part of the wood, which would have formed the ashes in its ordinary combustion. These amount to about one-fiftieth of the charcoal, and may be removed by digesting it in diluted muriatic acid, and afterwards washing it thoroughly on a filter with boiling water.

*Medical properties, &c.*—Powdered charcoal is antiseptic and absorbent. It is employed with advantage in certain forms of dyspepsia, attended with fetid breath and putrid eructations, in doses of about ten grains; and it has been exhibited in dysentery with the effect of correcting the fœtor of the stools. It has been recommended as a specific in intermittent fever, and for the purpose of obviating costiveness; but its powers in the former disease are not well established. Mixed with crumbs of bread or linseed meal and water, into the consistence of a cataplasm, it forms a good application to gangrene and ill-conditioned ulcers.

In consequence of the absorbent and antiseptic properties of charcoal, it is invaluable in domestic economy. Meat embedded in the close vessels is kept perfectly sweet for many months; and water intended for long voyages is equally preserved by the addition of its powder.

## CAROTA—CARROT SEED.

THE *Daucus Carota* is exceedingly common in this country, growing along the fences, and in neglected fields, which in the month of June and July are sometimes white over their whole surface with its flowers. It grows wild also in Europe, from which it is supposed by some botanists to have been introduced into the United States. The well-known garden carrot is the same plant somewhat altered by cultivation. The officinal portions are the seeds of the wild, and the root of the cultivated variety.

*Carrot seeds.*—These are very light, of a brownish color, of an oval shape, flat on one side, convex on the other, and on their convex surface, presenting four longitudinal ridges, to which stiff whitish hairs or bristles are attached. They have an aromatic odor, and a warm, pungent, and bitterish taste. By distillation they yield a pale yellow volatile oil, upon which their virtues chiefly depend. Boiling water extracts their active properties.

*Medical properties and uses.*—Carrot seeds are moderately excitant and diuretic, and are considerably employed, both in domestic practice and by physicians, in chronic nephritic affections, and in dropsy. As they possess to a certain extent the cordial properties of the aromatics, they are especially adapted to cases in which the stomach is enfeebled. From thirty grains to a drachm of the bruised seeds may be given at a dose; or a pint of infusion, containing the virtues of half an ounce or an ounce of the seeds, may be taken during the day. The whole umbel is often used instead of the seeds alone.

The wild root possesses the same properties with the seeds, and may be used for the same purposes. That of the garden plant has acquired much reputation as an external application to phagedenic, sloughing, and cancerous ulcers, the fetor of which it is supposed to correct, while it sometimes changes the character of the diseased action. It is brought to the proper consistence by scraping. In this state it retains a portion of the active principles of the plant, which render it somewhat stimulant. Boiled and mashed, as usually recommended, the root is perfectly mild, and fit only to form emollient cataplasms.

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CARUM—CARAWAY.

THE caraway plant is a native of Europe, growing wild in meadows and pastures, and cultivated in many places. It has been introduced into this country. The flowers appear in May and June, and the seeds, which are not perfected till the second year, ripen in August. The root when improved by culture, resembles the parsnip, and is used as food by the inhabitants of the North of Europe. The seeds are the part used in medicine. They are collected by cutting down the plant and threshing it on a cloth. Our markets are supplied partly from Europe, partly from our own gardens. The American seeds are usually rather smaller than those brought from Germany.

*Medical properties and uses.*—Caraway is a pleasant stomachic and carminative, occasionally used in flatulent colic, and as an adjuvant or corrective of other medicines. The dose in substance is from a scruple to a drachm. An infusion may be prepared by adding two drachms of the seeds to a pint of boiling water.

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### CARYOPHYLLUS—CLOVES.

Cloves appear to have been unknown to the ancients. They were first introduced in Europe by the Arabians, and were circulated through the medium of Venetian commerce. After the discovery of the southern passage to India, the trade in this spice passed into the hands of the Portuguese; but was subsequently wrested from them by the Dutch, by whom it was long monopolized. Within a few years, however, the extended culture of the plant has opened new sources of supply; and the commerce in cloves is no longer restricted to a single nation. The United States derive their chief supplies from the West Indies and the European colonies in Guiana.

*Medical properties and uses.*—Cloves are among the most stimulant of the aromatics, but like others of this class exert less effect upon the system at large than on the part to which they are immediately applied. They are sometimes administered in substance or infusion to relieve nausea and vomiting, correct flatulence, and excite languid digestion; but their chief use is to assist or modify the action of other medicines. They enter as ingredients into several preparations.

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### CHENOPODIUM—WORMSEED.

This species of *Chenopodium*, known commonly by the name of *wormseed*, and *Jerusalem oak*, grows almost in all parts of the United States, but most vigorously and abundantly in the southern section. It is usually found in the vicinity of rubbish, along fences, in the streets of villages, and in the commons about the larger towns. It flowers from July to September, and ripens its seeds successively through the autumn. The whole herb has a strong, peculiar, offensive, yet somewhat aromatic odor, which it retains when dried. All parts of the plant are occasionally employed; but the seeds only are strictly officinal. These should be collected in October.

As found in the shops, they are small, not larger than the head of a pin, irregularly spherical, very light, of a dull, greenish-yellow or brownish color, a bitterish, somewhat aromatic, pungent taste, and possessed in a high degree of the peculiar smell of the plant.

The seeds of the *Chenopodium ambrosioides*, which is also an indigenous plant, and very prevalent in the Middle States, are said to be used indiscriminately with those of the *C. anthelminticum*. They may be distinguished by their odor, which is weaker and less offensive, and to

some persons agreeable. The plant itself is often confounded with the true wormseed, from which it differs in having its flowers in leafy racemes.

*Medical properties and uses.*—Wormseed is one of our most efficient indigenous anthelmintics, and is thought to be particularly adapted to the expulsion of worms in children. A dose of it is usually given before breakfast in the morning, and at bed time in the evening, for three or four days successively.

The seeds are most conveniently administered in powder, mixed with syrup in the form of an electuary. The dose for a child two or three years old, is from one to two scruples.

The volatile oil is perhaps more frequently given than the seeds in substance, though its offensive odor and taste sometimes render it of difficult administration. The dose for a child is from five to ten drops, mixed with sugar, or in the form of emulsion.

### CHIMAPHILA—PIPSISSEWA.

THIS humble but beautiful evergreen is a native of the northern latitudes of America, Europe and Asia. It is found in all parts of the United States, and extends even to the Pacific ocean. It grows under the shade of woods, and prefers a loose sandy soil, enriched by decaying leaves. The flowers appear in June or July.

Pipsissewa, when fresh and bruised, exhales a peculiar odor. The taste of the leaves is pleasantly bitter, astringent, and sweetish; that of the stems and root unites with these qualities a considerable degree of pungency. Boiling water extracts the active properties of the plant, which are also imparted to alcohol. The constituents, so far as ascertained, are bitter extractive, tannin, resin, gum, lignin, and saline matters. The active principle has not yet been isolated, though it probably exists in the substance called bitter extractive.

*Medical properties and uses.*—This plant is diuretic, tonic, and astringent. It was employed by the aborigines in various complaints, especially scorfula, rheumatism, and nephritic affections. From their hands it passed into those of the European settlers, and was long a popular remedy in certain parts of the country, before it was adopted by the profession. It is particularly useful in cases attended with disordered digestion and general debility, in which its tonic properties and general acceptability to the stomach prove highly useful auxiliaries to its diuretic powers. Nevertheless, it cannot be relied on exclusively in the treatment of the complaint; for though it generally produces an increased flow of urine, it has seldom effected cures. Other disorders, in which it is said to have proved useful, are calculous and nephritic affections, and in general all those complaints of the urinary passages for which uva ursi is prescribed. It is very highly esteemed by some practitioners as a remedy in scorfula, both before and after the occurrence of ulceration; and it has certainly proved highly advantageous in certain obstinate ill-conditioned ulcers and cutaneous eruptions, supposed to be



connected with the strumous diathesis. In these cases it is used both internally, and locally as a wash.

The decoction is the preparation usually preferred. It is made by boiling two ounces of the fresh bruised leaves with three pints of water to a quart, and given to the amount of a pint in twenty-four hours. The watery extract may be given in the dose of twenty or thirty grains four times a day.

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### CIMICIFUGA—BLACK SNAKEROOT.

THE *black snakeroot*, or *cohosh* as this plant is sometimes called, is a native of the United States, growing in shady and rocky woods, from Canada to Florida, and flowering in June and July. The root is the part employed.

This consists of a thick, irregularly bent or contorted body or caudex, from one-third of an inch to an inch in thickness; often several inches in length, furnished with many slender radicles, and rendered exceedingly rough and jagged in appearance by the remains of the stems of successive years, which to the length of an inch or more are frequently attached to the root. The color is externally dark brown, almost black, internally whitish; the odor is feeble; the taste bitter, herbaceous, and somewhat astringent, leaving a slight sense of acrimony. The root yields its virtues to boiling water.

*Medical properties and uses.*—Cimicifuga unites, with a tonic power, the property of stimulating the secretions, particularly those of the skin, kidneys, and pulmonary mucous membrane. It is thought also by some to have a particular affinity for the uterus. Its common name was probably derived from its supposed power of curing the disease arising from the bite of the rattlesnake. It is employed chiefly in domestic practice as a remedy in rheumatism, dropsy, hysteria, and various affections of the lungs, particularly those resembling consumption.

The medicine is usually administered in the form of decoction. An ounce of the bruised root may be boiled for a short time in a pint of water, and one or two fluid ounces given for a dose several times a day.

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### CINNAMOMUM—CINNAMON.

THE cinnamon tree grows to the height of twenty or thirty feet, with a trunk from twelve to eighteen inches in diameter, irregular, knotty, and covered with a thick, rough, scabrous bark, which is externally ash colored, internally reddish. The branches are numerous, strong, horizontal, and declining. The young shoots are beautifully speckled with dark green and light orange colors. From the root spring numerous suckers which form a bush about the trunk. The leaves are from six to nine inches long, and from two to three broad, entire, oblong, pointed, three-nerved, with the lateral nerves vanishing as they approach

the point. They are in opposite pairs, and stand upon short slightly channeled footstalks. When young they are generally of a scarlet or light liver-color, become olive as they approach maturity, are afterwards of a shining green, and ultimately, before they fall, of an olive-yellow. The flowers are small, white and arranged in axillary and terminal panicles. The fruit is an oval berry, which adheres like the acorn to the receptacle, is larger than the black currant, and when ripe has a bluish-brown surface thickly scattered with white spots.

The tree emits no smell perceptible at any distance. The bark of the root has the odor of cinnamon with a pungency of camphor, and yields the principle upon distillation. The leaves have a spicy odor when rubbed, and a hot taste.

This species of laurel is a native of Ceylon, where it has long been cultivated for the sake of its bark. It probably grows also in Malabar, is Sumatra, Java, Borneo, Sooloo, and the neighboring islands; and in Cochin-china, Tonquin, the Chinese province of Quangsi, the Phillipines, the Nicobar Islands, and other parts of the East.

*Medical properties and uses.*—Cinnamon is among the most grateful and efficient of the aromatics. It is warm and cordial to the stomach, carminative, astringent, and like most other substances of this class, more powerful as a local than general stimulant. It is seldom, however, prescribed alone, though sometimes capable, when given in powder or infusion, of allaying nausea, checking vomiting, and relieving flatulence. It is chiefly used as an adjuvant to other less pleasant medicines, and enters into a great number of preparations. The dose of the powder is from ten grains to a scruple.

## COLOMBA—COLUMBO.

COLUMBO is a staple export of the Portuguese from their dominions in the South East of Africa. It is taken to India, and thence distributed to various parts of the world.

*Medical properties and uses.*—Columbo is among the most useful of the mild tonics. Without astringency, with very little stimulating power, and generally acceptable to the stomach, it answers admirably as a remedy in simple dyspepsia, and in those states of debility which are apt to attend convalescence from acute disorders, especially when the alimentary canal is left in an enfeebled condition. Hence it is often prescribed in the declining stages of remittent fever, dysentery, diarrhœa, cholera morbus, and cholera infantum. The absence of irritating properties renders it also an appropriate tonic in the hectic fever of phthisis, and its kindred affections. It is frequently administered in combination with other tonics, with aromatics, with mild cathartics, and with antacids. The remedy which is found most effectual in the permanent cure of a disposition to the accumulation of flatus in the bowels, is an infusion made with half an ounce of ginger, a small portion of bitter-root, and a pint of boiling water, and given in the dose of a wine-glassful three times a day.

## COPTIS—GOLDTHREAD.

This little evergreen bears considerable resemblance to the strawberry in size and general aspect. It has a perennial creeping root, which, from its slenderness and bright yellow color, has given rise to the name of *goldthread*, by which the plant is commonly known.

The goldthread inhabits the northern regions of this continent and of Asia, and is found in Greenland and Iceland. It delights in the dark shady swamps and cold morasses of northern latitudes and Alpine regions, and abounds in Canada, and in the hilly districts of New England. Its blossoms appear in May. All parts of the plant possess more or less bitterness; but this property is most intense in the root.

*Medical properties and uses.*—It is a simple tonic bitter, bearing a close resemblance to quassia in its mode of action, and applicable to all cases in which that medicine is prescribed. It may be employed as a local application in aphthous ulcerations of the mouth; but it probably has no other virtues in this complaint than such as are common to all the simple bitters. It may be given internally in substance, infusion, or tincture.

## CORNUS FLORIDA—DOGWOOD.

This is a small indigenous tree, usually about fifteen or twenty feet in height, though sometimes not less than thirty or thirty-five feet. It is of slow growth; and the stem, which generally attains a diameter of four or five inches, is compact, and covered with a brownish bark, the epidermis of which is minutely divided by numerous superficial cracks or fissures. The branches are spreading, and regularly disposed, sometimes opposite, sometimes in fours nearly in the form of crosses. The leaves are opposite, oval, about three inches long, pointed, dark green, and sulcated on the upper surface, glaucous or whitish beneath, and marked with strong parallel veins. Towards the close of summer they are speckled with black spots, and on the approach of cold weather assume a red color.

The dogwood is found in all parts of the United States, from Massachusetts to the Mississippi and the Gulf of Mexico; but it is most abundant in the Middle States. In the month of May it is clothed with a profusion of large white blossoms, which render it one of the most conspicuous ornaments of the American forests. The bark is the officinal portion, and is derived for use both from the stem and branches, and from the root. The bark of the root is preferred.

*Medical properties and uses.*—*Cornus Florida* is tonic and astringent.

It may be given in powder, decoction, or extract. The dose of the powder is from a scruple to a drachm, repeated in cases of intermittent fever, so that from one to two ounces may be taken in the interval between the paroxysms. The dried bark is said to be preferable to the fresh; as it possesses all the activity of the latter, without being equally liable to offend the stomach and bowels.

## CHELONA GLABRA—SNAKE-HEAD, BALMONY.

Root perennial; stem erect, though sometimes decumbent, from two to four feet high, angular or four square; flowers terminal, of different colors in different varieties; white, spotted with red, and purplish; and of a most singular shape, resembling the head of a snake with its mouth open. Leaves opposite, bearing a distant resemblance to mint leaves, of a dark green color when fresh, almost black when dry, and intensely bitter.

The snake-head is a most powerful bitter tonic, and one of the best articles to promote the appetite we ever used, and may be administered by itself or combined with other articles. Rafinesque says that it is an active cathartic, as well as tonic; but of this we have had no experience. The leaves are the best, and may be given in fevers, jaundice, and all other diseases, either in powder, tincture, or decoction. Wine is said to be the best menstruum to tincture them in.

It is said that the Indians make use of a strong decoction of the whole plant in eruptive diseases, biles, sores, and piles. It is a good tonic.—Grows in wetish land, and by the side of brooks, both in open grounds and in the shade.

## COTULA—MAY-WEED.

THIS plant grows abundantly both in the United States and in Europe. In this country, it is found in the vicinity of inhabited places, growing among rubbish, along the sides of roads, and in waste grounds. Notwithstanding its extensive diffusion, it is generally believed to be a naturalized, not an indigenous plant. It is frequently called *wild chamomile*. It flowers from the middle of summer till late in autumn.

The whole plant has a strong, disagreeable smell, and a warm, bitter taste, and imparts these properties to water.

The medical properties of this species of *Anthemis* are essentially the same with those of *chamomile*, for which it may be employed as a substitute; but its disagreeable odor is an obstacle to its general use. It has been given in nervous diseases, especially hysteria, under the impression, probably derived from its peculiar smell, that it possesses antispasmodic powers. It has also been thought to be emmenagogue. The whole plant is active; but the flowers, being less disagreeable than the leaves, are preferred for internal use. The remedy is best administered in the state of infusion.



## DRACONTIUM—SKUNK CABBAGE.

This plant is indigenous, growing abundantly in meadows, swamps, and other wet places, throughout the whole northern and middle sections of the Union. Its flowers appear in March and April, and in the lower latitudes often so early as February. The fruit is usually quite ripe, and the leaves decayed before the end of August. The plant is very conspicuous from its abundance, and from the magnitude of its leaves. All parts of it have a disagreeable fetid odor, thought to resemble that of the offensive animal after which it is named. This odor resides in an extremely volatile principle, which is rapidly dissipated by heat, and diminished by desiccation. The root is the part usually employed in medicine. It should be collected in autumn, or early in spring, and dried with care.

The acrimony, however, is dissipated by heat, and is entirely lost in decoction. It is also diminished by time and exposure; and the root should not be kept for use longer than a single season.

*Medical properties and uses.*—The properties of this root are those of a stimulant, antispasmodic, and narcotic. In large doses it occasions nausea and vomiting, with headache, vertigo, and dimness of vision. It is said to be a valuable ingredient in expectorant compounds.

## ERIGERON PHILADELPHICUM—COCASH, SQUAW-WEED.

**Roots** perennial, yellowish, formed by many branching fibres. The whole plant is pubescent or hairy, growing to the height of two or three feet; stems from one to five feet, straight, branching near the top, terminating in numerous downy flowers, of a yellowish white, or purplish and blue appearance. Leaves oblong, lower ones the largest, very small at the top. It continues in bloom until the autumnal frosts, which has given rise to one of its names, frostweed. Found all over the United States, growing in fields, which it often overruns; seldom seen in woods or mountains.

There are also two other species of this plant, *Erigeron Canadense* and *Erigeron Heterophyllum*, which are valuable articles of medicine, and may be used indiscriminately with the *Erigeron Philadelphicum*. They are tonic, diuretic, sudorific, and astringent in a powerful degree. Their oil, says Rafinesque, is so powerful that two or three drops dissolved in alcohol, have arrested suddenly uterine hæmorrhage, in the hands of Dr. Hales, who employs the oil of the *E. canadense*.

The diseases already relieved or cured by these plants, continues Rafinesque, are chronic diarrhœa, dropsy, suppression of urine, inflammation of the kidneys, gravel, gout, suppressed menstruation, cough, cutaneous eruptions, hæmorrhages, dimness of sight, rash, cold hands and feet, &c. Enough, one might well think, to be cured by three simple plants, all possessing the same virtues. They certainly contain active

properties, as all who have used them can testify, and we sometimes fear that they are too powerful to be used without the utmost discretion.—They certainly deserve a careful investigation, and if found too powerful for using without hazard, should be expunged from practice, but if not, they ought to be retained.

The whole plants are used fresh or dry, in infusion, decoction, or tincture. The extract is rather fetid, but more astringent than the infusion or tincture, and less so than the oil, which is one of the most efficient styptics.

The extract and syrup have been given with success in dry cough, bleeding at the lungs, and other internal hæmorrhages. The dose of the extract is from five to ten grains, (about a quarter to half a tea-spoonful,) often repeated.

As a diuretic, the infusion, decoction, or tincture, are preferable as being more active; some of these preparations have increased the daily evacuations of urine from twenty-four to sixty-seven ounces. A pint or two of the infusion or decoction may be administered daily, and agrees well with the stomach. From two to four drachms of the tincture may be taken during the day; and is made by digesting one ounce of the leaves or flowers in a pint of proof spirits. A fluid drachm measures about one large tea-spoonful.

Some preparation or other of those plants are said to afford speedy relief in all diseases of the bladder and kidneys attended with pain and irritation. They are also useful, applied externally, to wounds, and a poultice is said to dissolve hard tumors. The essence, made by saturating alcohol with the oil, and a little taken in water, at the same time applying, if practicable, some of it externally, will instantaneously stop the most dangerous hæmorrhage.

We are unwilling to leave this subject without advising those who may make use of these articles to do it cautiously, as our own experience would not justify recommending an indiscriminate application of them without some care and attention. It might, perhaps, be best to combine them with less active astringents.

## EUPATORIUM PERFOLIATUM—THOROUGHWORT.

Of this numerous genus, comprising not less than thirty species within the limits of the United States.

*Medical properties and uses.*—Thoroughwort is tonic, diaphoretic, and in large doses emetic and aperient. It is said to have been employed by the Indians in intermittent fever. We have seen it effectual in arresting intermittence when given freely in warm decoction, immediately before the expected recurrence of the paroxysm; but it operated in this instance by its emetic rather than its tonic power. The medicine has also been used as a tonic and diaphoretic in remittent and typhoid fevers, and is said to have been productive of advantage in yellow fever. Given in warm infusion, so as to produce vomiting or copious perspiration, in the commencement of catarrh, it will frequently arrest that

complaint. It has even been recommended as a diaphoretic in inflammatory rheumatism; and may prove serviceable if administered in the absence of general arterial excitement. As a tonic it has been given with advantage in dyspepsia, general debility, and other cases in which the simple bitters are employed.

With a view to its tonic effect, it is best administered in substance, or in cold infusion. The dose of the powder is twenty or thirty grains, that of the infusion a fluid ounce, frequently repeated. When the diaphoretic operation is required in addition to the tonic, the infusion should be administered warm, and the patient remain covered in bed. As an emetic and cathartic, a strong decoction, prepared by boiling an ounce with three half pints of water to a pint, may be given in doses of one or two gills, or more.

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### EUPATORIUM PURPURIMUM—GRAVEL-ROOT.

This species of Eupatorium is, like the preceding, a perennial herbaceous plant. Its stem is hollow, of a purple color, five or six feet high, and furnished with ovate lanceolate, serrate, rugosely veined, slightly scabrous leaves, which are petiolate, and placed four or five together in the forms of whorls. The flowers are purple, consisting of numerous florets contained in an eight-leaved calyx. It grows in swamps and other low grounds, from Canada to Virginia, and flowers in August and September. The root is the officinal portion, and has a bitter, aromatic, and astringent taste; and is said to operate as a diuretic. Its vulgar name of *gravel-root* indicates the popular estimation of its virtues.

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### EUPATORIUM TEUCRIFOLIUM—WILD HOREHOUND.

The wild horehound is an indigenous perennial, with an herbaceous stem about two feet high, supporting sessile, distinct, ovate, acute, scabrous leaves, of which the lower are coarsely serrate at the base, the uppermost entire. The flowers are small, white, consisting of five florets within each calyx, and disposed in the form of a corymb. The plant grows in low wet places, from New England to Georgia, and is very abundant in the Southern States. It is in flower from August to November. The whole herb is employed.

In sensible properties it corresponds with the *E. perfoliatum*, though less bitter and disagreeable to the taste. It is said to be tonic, diaphoretic, diuretic, and aperient; and in the South is much employed as a domestic remedy in intermittents and other fevers, to which the country upon the seaboard is subject. One quart of the infusion, containing the virtues of an ounce of the plant, may be given in divided doses during the day.

## GAULTHERIA—PARTRIDGE-BERRY.

This is a small, indigenous, shrubby, evergreen plant, with a long, creeping, horizontal root, which sends up at intervals one and sometimes two erect, slender, round, reddish stems. These are naked below, leafy at the summit, and usually less than a span in height.

The plant extends from Canada to Georgia, growing in large beds in mountainous tracts, or in dry barrens and sandy plains, beneath the shade of shrubs and trees, particularly of other evergreens, as the *Kalmiæ* and *Rhododendra*. It is abundant in the pine barrens of New Jersey. In different parts of the country it is known by the various names of *partridge-berry*, *deer-berry*, *tea-berry*, and *mountain tea*.

*Medical properties and uses.*—*Gaultheria* has the usual stimulant operation of the aromatics, united with astringency; and may, therefore, be used with advantage in some forms of chronic diarrhœa. Like other substances of the same class, it has been employed as an emmenagogue, and with the view of increasing the secretion of milk. It may be conveniently administered in the form of infusion, which in some parts of the country is not unfrequently used at the table as a substitute for common tea.

## HAMAMELIS VIRGINIA—WITCH HAZEL, SPOTTED

## ALDER, WINTER BLOOM, &amp;c.

WITCH HAZEL is a shrub, growing from ten to twenty feet high, branches irregular, crooked, and knotty: bark smooth, grey, with brown spots. Leaves rather large, smooth, alternate, oval or roundish. Flowers appear in the fall or winter, generally after the leaves have fallen off, the fruit ripening the next autumn. Found in most of the States; growing on hills, mountains, stony banks and near streams.

The bark and leaves are slightly bitter, and very astringent. The leaves are a most valuable article of medicine, as an astringent tonic and styptic. They may be employed in tea for bowel complaints, bleeding at the stomach, lungs, and all other internal hæmorrhages; and in snuff for bleeding at the nose; and no doubt might be advantageously applied to wounds to stop the effusion of blood. As a styptic to check internal bleeding, the witch hazel perhaps is amongst the best articles known.

The Indians, it is said, consider the witch hazel a valuable article of medicine, applying the bark in poultice or wash to painful tumors, and external inflammations. A poultice of the bark is said to be efficacious in removing painful inflammations of the eyes.



## HYDRASTIS CANADENSIS—GOLDEN SEAL, YELLOW PUCCOON, YELLOW ROOT, INDIAN PAINT, &c.

Root perennial, crooked, wrinkled, rough, and knobby, of a bright yellow color, with many long fibres. Stem round, simple, straight, growing from eight to fourteen inches high, bearing commonly two rough leaves at the top somewhat resembling the leaves of the sugar maple, in the center of one of which appears the flower, which gives rise to a fleshy, red, many seeded berry. Found mostly in the Western States.

The golden seal is a powerful bitter tonic; highly useful in all cases of debility and loss of appetite. It may be used alone, or combined with other tonics. Very useful during recovery from fevers, in dyspepsia, or any other complaint, to remove the heavy, disagreeable sensation often produced by indigestible food, by taking a tea-spoonful in hot water sweetened.

A decoction of the golden seal is also a very valuable remedy for sore eyes, as well as all other local inflammations, externally applied. It is likewise highly probable that it may be found useful as an external application to ulcers, as Rafinesque says, the Indians use it for sore legs, and many external complaints, as a topical tonic.

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## HENCHIERA AMERICANA—ALUM ROOT.

THE root of this excellent plant is a very intense astringent. It cannot be sufficiently recommended, from the fact, that it is one of the very best articles of its kind in the whole *Materia Medica*. Prof. Barton believes that this root alone has cured genuine cancer, and highly recommends it in obstinate ulcers, also in fresh wounds.

A common poultice made of the root, is the best remedy I ever applied in piles. It gives almost immediate relief. It is seldom necessary to make but a single application, followed by an injection prepared by making a strong decoction of the root. The same will doubtless prove to be an admirable remedy in uterine hæmorrhage, as in other hæmorrhages, where the remedy can be applied.

## HEDEOMA—PENNYROYAL.

THE plant is common in all parts of the United States, preferring dry grounds and pastures, and, where it is abundant, scenting the air for a considerable distance with its grateful odor.

Both in the recent and dried state it has a pleasant aromatic smell, and a warm, pungent, mint-like taste. It readily imparts its virtues to boiling water. The volatile oil upon which they depend may be separated by distillation, and employed instead of the herb itself.

*Medical properties and uses.*—Pennyroyal is a gently stimulant aromatic, and may be given in flatulent colic and sick stomach, or to qualify the action of other medicines. Like most of the aromatic herbs, it possesses the property, when administered in warm infusion, of promoting perspiration, and of exciting the menstrual flux when the system is predisposed to the effort. Hence it is much used as an emmenagogue in popular practice, and frequently with success. A large draught of the warm tea is given at bed-time, in recent cases of suppression of the menses, the feet having been previously bathed in warm water.

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• INULA—ELECAMPANE.

ELECAMPANE has a perennial root, and an annual stem which is round, furrowed, villous, leafy, from three to six feet high, and branched near the top. The leaves are large, ovate, serrate, crowded with reticular veins, smooth and deep green upon the upper surface, downy on the under, and furnished with a fleshy midrib. Those which spring directly from the root are petiolate, those of the stem sessile and embracing. The flowers are large, of a golden yellow color, and stand singly at the ends of the stem and branches.

The roots, which are the officinal part, should be dug up in autumn, and in the second year of their growth. When older they are apt to be stringy and woody.

*Medical properties and uses.*—Elecampane is tonic and gently stimulant, and has been supposed to possess diaphoretic, diuretic, expectorant, and emmenagogue properties. By the ancients it was much employed, especially in the complaints peculiar to females; and it is still occasionally resorted to in cases of retained or suppressed menstruation. In this country it is chiefly used in chronic diseases of the lungs, and is sometimes beneficial when the affection of the chest is attended with weakness of the digestive organs, or with general debility. From a belief in its deobstruent and diuretic virtues, it was formerly prescribed in chronic engorgements of the abdominal viscera, and the dropsy to which they so often give rise. It has also been highly recommended both as an internal and external remedy in tetter, psora, and other diseases of the skin. The usual modes of administration are in powder and decoction. The dose of the former is from a scruple to a drachm. The decoction may be prepared by boiling half an ounce of the root in a pint of water, and given in the dose of one or two fluid ounces.

## IRIS VERSICOLOR—BLUE FLAG.

The blue flag is found in all parts of the United States, flourishing in low wet places, in meadows, and on the borders of swamps, which it serves to adorn with its large and beautiful flowers. These make their appearance in June. The root is the medicinal portion. The flowers afford a fine blue infusion, which serves as a test of acids and alkalis.

The recent root is without odor, and has a nauseous, extremely acrid taste, which is imparted to water by decoction, and still more perfectly to alcohol. The acrimony as well as medicinal activity is impaired by age.

The blue flag possesses the cathartic, emetic, and diuretic properties common to most of the species of this genus. It is said by Mr. Bartram to be held in much esteem by the Southern Indians; and Dr. Bigelow informs us that he has found it efficacious as a purgative, though inconvenient from the distressing nausea and prostration which it is apt to occasion. Dr. Macbride of Carolina found it useful in dropsy. It is known to possess very great alterative properties; and is believed by some as possessing great merit in the chronic forms of the venereal. It may be given in substance, decoction, or tincture. The dose of the dried root is from ten to twenty grains.

## JUGLANS—BUTTERNUT.

THIS is an indigenous forest tree, known in different sections of the country by the various names of *butternut*, *oilnut*, and *white walnut*. In favorable situations it attains a great size, rising sometimes fifty feet in height, with a trunk three or four feet in diameter at the distance of five feet from the ground.

The inner bark is the medicinal portion, and that of the root, being considered most efficient. It should be collected in May or June.

On the living tree, the inner bark when first uncovered is of a pure white, which becomes immediately on exposure a beautiful lemon color, and ultimately changes to a deep brown. It has a fibrous texture, a feeble odor, and a peculiar, bitter, somewhat acrid taste. Its medicinal virtues are entirely extracted by boiling water.

*Medical properties and uses.*—Butternut is a mild cathartic, operating without pain or irritation, and resembling rhubarb in the property of evacuating without debilitating the alimentary canal. It was much employed during our revolutionary war by Dr. Rush and other physicians attached to the army, and was highly esteemed. It is especially applicable to cases of habitual costiveness and other bowel affections, particularly dysentery, in which it has acquired considerable reputation. It is given in the form of decoction or extract, never in substance. The extract is officinal, and is almost always preferred. The dose is from twenty to thirty grains as a purge, from five to ten grains as a laxative.

## JUNIPERUS—JUNIPER.

This is an erect evergreen shrub, usually small, but sometimes attaining a height of twelve or fifteen feet, with numerous very close branches. The leaves are narrow, longer than the fruit, entire, sharply pointed, channeled, of a deep green color, somewhat glaucous on their upper surface, spreading, and attached to the stem or branches in threes, in a verticillate manner.

The berries impart their virtues to water and alcohol. They are very largely consumed in the preparation of gin.

The tops of juniper are directed by the London and Dublin Colleges. Their odor is balsamic, their taste resinous and bitterish; and they possess similar virtues with the berries.

*Medical properties and uses.*—Juniper berries are gently stimulant and diuretic, imparting to the urine the smell of violets; and producing occasionally, when very largely taken, disagreeable irritation in the urinary passages. They are chiefly used as an adjuvant to more powerful diuretics in dropsical complaints; but have been recommended also in scorbutic and cutaneous diseases, catarrh of the bladder, and atonic conditions of the alimentary canal and uterus. They may be given in substance triturated with sugar, in the dose of one or two drachms repeated three or four times a day. But the infusion is a more convenient form. It is prepared by macerating an ounce of the bruised berries in a pint of boiling water, the whole of which may be taken in the course of twenty-four hours. Extracts are prepared from the berries, both bruised and unbruised, and given in the dose of one or two drachms; but in consequence of the evaporation of the essential oil, they are probably not stronger than the berries in substance.

## LIRIODENDRON—TULIP-TREE BARK.

The tulip-tree extends from New England to the borders of Florida, but is most abundant and attains the greatest magnitude in the Middle and Western States. It delights in a rich strong soil, and luxuriates in the exhaustless fertility of the banks of the Ohio and its tributary streams. Throughout the United States it is known by the inappropriate name of *poplar*, for which that of *tulip-tree* is beginning to be substituted. When in full bloom, about the middle of May, it presents in its profusion of flowers, its rich, shining, luxuriant foliage, its elevated stature, and elegant outline, one of the most magnificent objects which the vegetable kingdom affords.

*Medical properties.*—The bark of the root is preferable, and is stimulant, tonic, anthelmintic, and diaphoretic. It is used in rheumatism, dyspepsia, and other complaints where a gently stimulant and tonic impression is desirable.



## LYCOPUS—BUGLE-WEED.

THIS plant grows in shady and wet places throughout the greater part of the United States. Its flowering period is August. The whole herb is used. It has a peculiar odor, and a nauseous slightly bitter taste, and imparts these properties, as well as its medical virtues, to boiling water.

*Medical properties and uses.*—According to Dr. A. W. Ives, the bugle-weed is a very mild narcotic. It was introduced into notice by Drs. Pendleton and Rogers, of New York, who obtained favorable effects from its use in incipient phthisis and hæmorrhage from the lungs. In these complaints it is useful by diminishing the frequency of the pulse, quieting irritation, and allaying cough. It is most conveniently taken in the form of infusion, which may be prepared by macerating an ounce of the herb in a pint of boiling water, and drank ad libitum.

## LOBELIA INFLATA—INDIAN TOBACCO.

To Dr. Samuel Thomson belongs the honor of introducing to notice this truly important and highly prized article of medicine. It is not denied that it might have been used by the aborigines of our country ages ago for remediate purposes; but for ages to come, notwithstanding the wishes and efforts of some to the contrary, Thomson's fame for this act alone, must brighten and brighten as time recedes.

The following is a letter from Professor Tully (Professor of Materia Medica of Yale College) upon the virtues of this article:

“*New Haven, (Ct.) Thursday, 22d March, 1838.*”

“I have no sort of knowledge of the newspaper notice which you mentioned, never having seen it, nor even heard of it before. It is true, however, that I have stated, in my public instructions, that *lobelia inflata* is entirely destitute of any *narcotic* or even *cathartic* powers. This is, however, a negative position which is incapable of positive proof. If I were to assert that *cinchona* is *not narcotic*, I could not prove it positively. All I could say would be, that for 27 years I have been in the habit of using it, in large quantities and small, and of witnessing its use by others—without a single indication of any *narcotic operation*. Just so it is with regard to *lobelia inflata*. I have now been in the habit of employing this article for 27 years, and of witnessing its employment by others for the same length of time, and in large quantities, and for a long period, without the least trace of any *narcotic* effects. I have used the very best officinal tinctures, in the quantity of three fluid ounces in 24 hours, and for four and seven days in succession; and I have likewise given three large table-spoonsful of it within half an hour, without the least indication of any *narcotic operation*. I have likewise given it in substance, and in other forms, and still without any degree of this operation. I have superintended experiments with it, made by young men, and always with the same results. I have known four or five tobacco pipesful of it smoked in immediate succession, and without any narcosis; and I have also known it given by enema, and with the same result. In

addition to this, no species of the genus *lobelia*, nor of the order *lobelia-ceæ* is known to possess a particle of narcotic power. Dr. Bigelow, of Boston, was the first person who ascribed narcotic powers to this agent; and this he first did in 1817, and not from his own observations, but from the general fact, that in connection with its nauseating and emetic operation, it sometimes produces vertigo and nervous tremors; and that when it nauseates powerfully without vomiting, and when it vomits excessively, it produces considerable prostration. After Dr. Bigelow first pronounced it *narcotic*, subsequent writers very speedily converted "*something as black as a crow into three black crows*"; and Dr. Ansel W. Ives, of New York, at last pronounced *lobelia inflata* to be a "*deadly narcotic*," and that its action as an *emetic*, "*is secondary, or symptomatic of the primary impression upon the brain, like that caused by tobacco and other narcotic poisons*." But all this is mere stuff and closet speculation, and does not contain a single truth. There is no probability that Dr. Ansel W. Ives ever used the article in his life.

The symptoms from which Dr. Bigelow inferred its *narcotic power*, are produced far more eminently by the *tartrate of antimony and potassa*, and quite as often by *ipecacuanha*, as by *lobelia inflata*; and I have not only witnessed them from sea-sickness and sick-headache, but I have very often experienced them in my own person from these two affections.

As to the *cathartic powers* of this article, I have the same ground for a negative decision, as in regard to its *narcotic power*, with one exception only, viz: some other species of the genus are unquestionably *cathartic*. I have never been able to produce a *laxative*, or even *æcopratic* [opening] effect with it; but I have occasionally (though not often) known it prove *coprostatic* [costive.]

As an *emetic*, I am satisfied that it is as kind and as destitute of all hazard, as the officinal *ipecacuanha*, though perhaps it may be somewhat more efficient. I have occasionally known it produce powerful nausea without vomiting, and with considerable prostration; but not by any means as often as I have known *ipecacuanha* do this. I have a considerable number of professional friends who use it more than any other *emetic*, and, on the whole, consider it one of the very best agents of this class, in the whole *Materia Medica*, for a large number of cases of frequent occurrence.

But *lobelia inflata* possesses another power of much more value than its emetic power, and of much more value than would be in its *narcotic power*, if it possessed any. There is not, however, space in this sheet to treat of it; I can only say, that it is the exertion of this power, when *lobelia inflata* is used as an *emetic*, that gives it a superiority over all other emetics in common use, for the treatment of certain diseases.

The officinal tincture, carefully prepared, is the pharmaceutic form which I prefer. As an *emetic*, a table-spoonful is a medium dose for an adult of ordinary susceptibility. This quantity, however, will frequently fail of operating, if the patient is quietly in bed, in which case it may be necessary to repeat this dose after an interium of 15 minutes. If the patient is up and moving about, a table-spoonful will usually vomit in ordinary cases. But there are instances in which a desert-spoonful is a sufficient emetic dose.

I am confident (the old women's stories in the books to the contrary notwithstanding) that *lobelia inflata* is a valuable, a safe and a sufficiently gentle article of medicine; and I think the time will come when it will be much more appreciated. Little, however, of its value can be specified within the compass of a single sheet of paper.

Be pleased to excuse the hurry and seeming carelessness of the preceding, for which I must plead the fatigue and indisposition of my very tedious journey.

I remain yours, Sir, with much respect,

WILLIAM TULLY.

DR. H. LEE, Middleton, Ct."

Professor Waterhouse's letter to Dr. Thompson must be deemed authentic upon the subject of the originality of *lobelia* as a medicine.

"Cambridge, December 8, 1835.

TO SAMUEL THOMSON, Botanic Practitioner of Medicine:

Dear Sir—To the questions put to me yesterday I answer, that I remain firm in the opinion that you were the discoverer of the remarkable medical virtues of the *lobelia inflata*, as a safe emetic, and other rare qualities in effectually detaching the stomach and intestines of foul and morbid matter—a prime object in the removal of all disorders consequent on imperfect digestion. The efficacy and safety of this vegetable I have had ample and repeated proofs of in a number of cases, and in my own person, and have reason to value it equal to any article in our *Materia Medica*.

That you yourself were the originator of this compound process, very extensively known under the title of the *Thomsonian Practice or System*, I have no doubt whatever. I mean the uniting the warm bath, with the thorough cleansing of the whole alimentary canal. I value and recommend it on this account. It effects in three or four days, what we regular physicians used to occupy as many weeks to accomplish. As a public teacher of the practice of physic, I have told my pupils for nearly half a century past, that when they have learned how to restore the long impaired organs of digestion to their pristine or natural state, they have acquired two-thirds of their profession; and on that simple principle is based the whole doctrine of my printed lecture on the pernicious effects of *smoking cigars*, and the inordinate use of ardent spirits.

Furthermore: the regular physician finds it necessary sometimes to make a *great change* in the human frame, or to make a very strong *counter irritation*, so as to obliterate the *morbid* or *destructive* one. This used to be done by *quicksilver*, that is *mercury* in the various preparations; when pushed to a *salivation* it dilapidates, if we may so speak, or dissolves the human fluids, all of which is made up of globules, or round particles, on the *crasis* of which depends the vital integrity of our bodies, and of course, our health and vigor. After the hazardous process of salivation, the physician may, perhaps, be able to say—*now I have so far changed the morbid state of the patient, that his disease is conquered, and entirely overcome by the powerful operation of the mercury*. But then in what condition does he find the sufferer? His teeth are loosened, his joints are weakened, his healthy countenance is impaired, his voice is more feeble, and he is more feeble, and he is more susceptible of cold,

and a damp state of the weather. His original disorder is, to be sure, overcome, but it is paying a great price for it. Secret history conceals from public notice innumerable victims of this sort.

Now, my sagacious, industrious, and much respected EMPIRIC, or ECLECTIC, if you like the latter term better, let us come to the point you seem to aim at, namely, my opinion on the whole.

I consider a man laboring under a chronic disease of some standing, who has passed through one, two, or three (as the case may be) of your processes of the lobelia emetic, to be as much altered as the man who has gone through the very disagreeable operation of mercurial salivation; and if so, your discovery is highly valuable, and on this account it was that I spoke freely and strongly in commendation of the new practice, and was not afraid nor ashamed to hail you as a REFORMER, and to give you full credit, and in this view, I have always considered you as standing on higher ground than *Paracelsus*, who was born in 1493.

As to the point of your *originality*, I will sum it up in as few words as I possibly can—I regard you as the TREE, the root and trunk, of the lobelia and vapor bath system conjoined; its limbs your immediate agents, and its leaves and fruit, the purchasers of the rights and privileges—all deriving their value from the Tree of knowledge; and having said this, I have performed a grateful office, and I may add, duty, to all around me, and remain, and hope ever to remain,

Your steady friend,

BENJAMIN WATERHOUSE."

Dr. Waterhouse, it will be remembered, was a Professor of the Theory and Practice of Medicine in the Cambridge University, (Mass.) for a period of twenty-seven years. His fame, as a medical philosopher, has extended to France, England, and Germany, in which countries he is deservedly appreciated and admired; and previous to his essays on the Thomsonian System, he was regarded in this country, as one of the brightest ornaments of the medical profession.

See the different preparations in the list of compounds.

## LEPTUAMNIUM VIRGINIANUM—BEECH DROPS, CANTHARY-ROOT.

THIS is altogether a singular plant, chiefly found growing upon the roots of the beech tree. The root is bulbous, yellowish, covered at the bottom or lower end with a mat of short, crooked fibres. Stem from eight to fifteen inches high, much branched, beset with scattered, short scales instead of leaves, of which the plant is quite destitute. Flowers remote, but numerous, situated just above the scales, all along the branches. The plant is usually of a pale sickly color, intermixed with reddish or dark purple, white and yellow stripes.

The beech drops are astringent, bitterish, and nauseous; useful as a remedy for sore mouth, dysentery, and no doubt might be advantageously employed in other cases needing astringent medicines; and are actu-



ally said to have been of great service applied to obstinate ulcers. They are also supposed to have been used in cancerous affections with a happy effect, and even to have performed cures of that dreadful scourge of the human race. For ulcers and cancerous affections, the beech drops may be pulverised, both roots and tops, and the powder sprinkled on the ulcer, or a tea may be made and used as a wash. The internal use, at the same time might be also advantageous.

### MARRUBIUM—HOREHOUND.

This plant is a native of Europe, but has been naturalized in this country, where it grows on the roadsides, and flowers in July and August. It is also cultivated in our gardens.

The herb has a strong rather agreeable odor, which is diminished by drying, and is lost by keeping. Its taste is bitter and durable. The bitterness is extracted by water and alcohol.

*Medical properties and uses.*—Horehound is tonic, in large doses laxative, and may be so given as to increase the secretion from the skin, and occasionally from the kidneys. It was formerly considered a valuable deobstruent, and recommended in chronic hepatitis, jaundice, menstrual obstructions, phthisis, and various cachectic affections. It is employed chiefly in catarrh, and other chronic affections of the lungs, attended with cough and copious expectoration. The infusion made in the proportion of an ounce of the herb to a pint of boiling water, may be given in wine-glassful doses. The dose of the powder is from thirty grains to a drachm. The medicine is also much used in the shape of syrup and candy.

### MYRICA CERIFERA—BAYBERRY.

This shrub grows on and near the sea shore, from Main to Georgia; in New England and Virginia, very abundantly. It also grows about the great lakes between the United States and Canada, and in Tennessee, Alabama and Mississippi; but I think that growing near the sea shore the strongest and best.

*Properties.*—For removing canker from the system in all chronic cases, this is an invaluable medicine. It is a powerful stimulant, though its effects on the sensitive organs, are not, to most persons, so disagreeable as those of cayenne and some other stimulants. It is astringent and slightly mucilaginous, producing that kind of action in the system which generates heat, and is consequently very properly united with cayenne to raise the action in all cases of cold clamminess, where there is much morbid matter in the system, in which cases, it may be given as strong and as freely as you please. In cases of acute and high fever, where the skin is very dry and hot, and the pulse quick, full and strong, I do not find it so good to promote perspiration, to relieve the oppressive, superficial heat, and quiet the nervous system, as catnep, sage,

balm, boneset, and many other cooling sudorifics. If given weak, however, and a large quantity of fluid, it answers well; even in these cases, where, to give it very strong, in small quantities of fluid is objectionable, because it creates the excitement which produces thirst, without furnishing fluids to slake it.

The bark of the root is the strongest, but so great is the demand for it, that the whole should be collected, and the leaves also preserved, of all the shrubs that are dug up. These will be useful in less urgent cases. They should be kept distinct, and properly labeled. They will be found very useful in poultices for old canker sores, scorfulous tumors, &c. A constant drink of bayberry and sumach bark or leaves, will cure the scorfula in almost any stage. But I would not specify lest I limit the use of this valuable article. I know of but the case mentioned above, where it is improper, and it is so there only because it is less valuable than some other articles. Being astringent and stimulant, it is not so suitable when the skin or the mucous membrane is already contracted and excited, as articles that relax and lubricate. In all other cases, it tends to promote every secretion, and is, of course, good to remove canker from every obstructed organ or tissue.—*Curtis*.

Many articles have been proposed as substitutes for bayberry, and some are certainly valuable; but we have no reason for giving preference to any other, this appearing to be sufficient, of itself, for all the purposes for which it is designed. We do not pretend to say that no others should be used; for it will be seen in our future remarks on the compound forms in which the remedies recommended under the head of Nos. 3 and 4, in Dr. Thomson's *Materia Medica*, that we highly approve of such prescriptions, for reasons, deduced from established medical principles, which will be then assigned.

Bayberry is perhaps the most valuable astringent with which we are acquainted; this property, unlike that of other articles of the same class used by the practitioners of the regular schools, being so combined by nature with other medical qualities, resulting but too frequently from the operation of the articles alluded to. Its astringency renders it a remedial agent of the very highest importance, in all those cases where there is a great afflux of the fluids of the bowels, and consequent liquid discharges, which add to the existing debility of the patient, as in diarrhœa, dysentery, cholera morbus, &c. In these, besides being used in the form of tea, it will be found highly advantageous to administer it freely in the injections, as the latter treatment, indeed must be, in some degree, our main dependence. The same property will also point out its use in hæmorrhage, from whatever cause occurring, as well as in those forms of disease, where either the ligaments or muscular fibres have lost their natural tone or power of contraction, and labor under protracting relaxation. Hence its use is indicated, by injection *per vaginam*, in disease of the uterine system.

This property is that on which its value in detaching the canker from the mucous membrane of the stomach and bowels also depends. It arises from the chemical principle called tannin, which it possesses abundantly. This principle, when brought in contact with the vitiated mucous, to which Dr. Thompson has given the name of canker, and

which collects, sometimes in almost incredible quantities throughout the whole length of the alimentary canal, loosens it from its attachments. Since canker is discoverable, in some form or other, and to a greater or less degree, in every modification of disease, it will be readily imagined that bayberry is universally serviceable.

We need not fear from its free exhibition, the supervention of that obstinate costiveness, so frequently produced by the use of the astringents of the old school, inasmuch as its tonic properties, together with those to be hereafter noticed, obviate this difficulty entirely. As the strength must necessarily be impaired by whatever exhausts the system of its natural fluids, or produces relaxation, it will be found an excellent restorative. It therefore not only forms one of the ingredients of Dr. Thomson's No. 3, but also enters into the composition of his No. 5. By its tonic property, it is further indicated to prevent the recurrence of symptoms, once subdued by its astringency. This, however, might be considered by some, as derogating from its claims to safety; but those who have shaken off the fetters of medical ignorance, are aware that philosophy does not approve the preposterous idea of *entonic* disease, or such as arise from rigidity of fibre. If such existed in reality, bayberry, on account of its being a tonic, would be contra-indicated, while the anti-phlogistic regimen should be pursued. But as such an idea will appear ridiculous to every Thomsonian, we need not spend time in endeavoring to prove, that even in such cases, the use of bayberry cannot produce evil results.

It is also stimulant, and on this account may be administered with decidedly beneficial effects, where the bowels, having become coated with canker, are rendered insensible to the natural stimulus of the animal secretions, and have therefore lost their action and are costive. It will doubtless be evident that here, as in cases where the discharges are too copious and frequent, the best way to administer it is by injection. While by its astringency it loosens the canker which sometimes very firmly adheres to the mucous membrane of the intestines, and by its tonic properties, restores the healthy tone of the bowels, it also stimulates the muciparous glands to the performance of their functions. Without this, it would be in vain that the first of its effects should be produced; that bowels would soon relapse into their former torpidity. But it may be of service, administered thus, in another way, viz: by the stimulation of the whole range of glands throughout the system, by means of absorption.

It is alterative, producing a complete change in all the secretions. Long established habits are always difficult to overcome, and an alterative that may be depended upon, has for a length of time, been considered a desideratum in medicine. This is now found in bayberry, the alterative powers of which stand without a rival in the materia medica. Where the condition of the secretions has become vitiated either from a bad habit of body, or from the operation of medicines, poisonous in their nature, this is the best articles that can be given. Thus, after a course of mercurial treatment it will be found that the secretions are morbid in a greater or less degree, and therefore, the exhibition of such a medicine as bayberry is indicated.

It is detergent, having a tendency to clean foul ulcers and old sores. We are not prepared to decide whether this property is owing entirely to its tonic, stimulant and alterative powers. We incline, however, to the opinion, that it is. Whatever be the nature of the matter formed and discharged from ulcers, it will be judicious to treat them with poultices, of which bayberry is one of the ingredients, by washing with a tea of this article, and at the same time, giving the tea as a common drink. It is its detergent, together with its alterative properties that has enabled Thomsonian physicians to practice with so much more success in the cases to which we have referred than those of the old school. It has frequently been said, that to heal up ulcers of long standing, would prove highly injurious, if not indeed fatal to the patient. The saying, moreover, has been but too frequently verified in the practice of the regular faculty. But we fear not such a consequence as the result of our practice; our medicines, not drying up the discharge, but cleansing its quality, and changing its nature.

It is discutient, and will therefore prove beneficial in the treatment of scrofulous nodes or swellings. In this case also the application of bayberry should be of a similar kind to that recommended in the last paragraph, that is by poultice, as well as by internal exhibition. It might perhaps be employed in the same form, with equal success, in other glandular swellings, even though not of a scrofulous nature. In its internal use for the same purpose, it stands pre-eminently superior to every other alterative that can be exhibited. Applied in poultice, all its properties seem particularly adapted to the cure of strumous tumors; its stimulant qualities removing the irritability of the part; while as a tonic it relieves the debility, and, as a detergent and alterative, it cleanses whatever acrimony of the fluids may exist, and changes the nature of the secretions of the lymphatic glands.

It is also antiseptic. Tannin is that principle which, even in dead animal matter so powerfully removes the putriferactive process; and hence, as we have said this principle resides abundantly in bayberry in inflammations likely to terminate in sphacelus or gangrene, bayberry is indicated. The same property recommends it in all exanthematous and eruptive disorders, as a lotion to allay the irritation in some, and to destroy the ichorous secretion in others, of these forms of disease.—*Phil. Botanic Sentinel*.

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## NYMPHA ODORATA—WHITE POND LILY, TOAD LILY.

Root perennial, nearly the size of one's wrist, very long, somewhat hairy, horizontal, blackish, and knotty, always growing in the water.—Leaves large, round, cleft from the edge to the stem which is in the centre, each lobe ending in a short, acute point, upper surface smooth and glossy, without veins, lower surface reddish, with radiating nerves. Flowers large, white, giving out a sweet odor, opening to the sun in the morning and closing at night.

The white pond lily is a very valuable article of medicine, for either internal or external use. Internally it is an astringent tonic, useful in



diarrhœa, dysentery, and all cases of debility. Externally it is useful in poultice, for biles, tumors, inflammations, ulcers, &c. The leaves are also useful for the same purpose. The fresh juice of the root mixed with lemon juice, is said to be good to remove freckles, pimples, or blotches from the skin. A tea of the root may be used at discretion; or it may be compounded with other astringent or bitter articles, and used as a tonic.

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### PHYTOLACCA DECANDRA—POKE, SCOKE, PIGEON BERRY, GARGET-ROOT.

Root large, perennial, branching, covered with a very thin brownish bark or skin. Stems many, annual, large, green at first, afterwards purple or red, smooth, branching, rising from four to eight feet high. Leaves large, scattered, smooth, oblong. Flowers opposite the leaves, on long racemes or spikes, producing many fleshy, dark purple berries, depressed or flattened. Found in abundance throughout the United States.

The poke root is generally regarded as a strong poison, though by some recommended as a good emetic. We think it, however, not to be relied upon for this purpose. Externally, the roasted root is often advantageously applied as a poultice to swellings, bad ulcers, and rheumatic joints. The juice of the berries dried in the sun to a proper consistence for a plaster, is said to have cured cancers.

The poke is introduced into this work principally on account of its high reputation as a remedy for rheumatism. For this purpose, the ripe berries are collected in the fall, the juice pressed out, and about half the quantity of brandy (or enough to preserve it,) added to it, and bottled for use. We are also very strongly of the opinion that equal quantities of this juice and a strong decoction of the rattle root, with brandy enough to preserve the mixture, taken in small doses, would probably make a better medicine for rheumatism than any single remedy ever tried. We wish some individual whose opportunities allow him to make frequent and extensive trials, would test the powers of this compound.

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### PINUS BALSAMEA—BALSAM FIR, HEMLOCK FIR.

The fir tree is a native of northern climates where it is most common. It also grows as far south as Tennessee, where it is confined to the highest mountains.

The liquid resin, called balsam of fir, or balsam of Canada, is of a light color, very tenacious or sticky, and inflammable. It is found in small blisters on the surface of the fir trees; these blisters are pierced with a knife or some other sharp instrument, from which the balsam exudes and is thus collected for use.

As an internal remedy, this balsam is advantageously employed in

complaints of the breast and lungs, either pain, soreness, or cough; it strengthens the nervous system, loosens the bowels, cleanses and heals internal ulcers, and diseases of the urinary passages, after proving useful in the cure of gleet as well as the preceding stages of the venereal complaint; and in fluor albus or whites. Externally, this valuable balsam is applied to ulcers and wounds, being an excellent ingredient in healing salves. Dose, internally, half a tea-spoonful.

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### PINUS CANADENSIS—HEMLOCK TREE.

THE inner bark of the common hemlock tree affords a very good astringent, which may be employed in all cases where articles of that class are indicated. The leaves and boughs are famed for producing perspiration by drinking the tea and sitting over the steam. The oil and essence are a good stimulant tonic, useful in colds, &c. The oil is also a valuable ingredient in bathing drops.

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### POPULUS TREPIDA—POPLAR, QUAKING ASP, QUIVER LEAF, ASPIN.

THE quaking asp is a common tree in most parts of the country, growing to various sizes, some trees large enough for sawing timber. The leaves are round, smooth, and jagged, and the petioles or foot-stalks, being flattened transversely with the surface of the leaves, the least breath of air agitates and keeps them in motion; and hence the name of quaking asp, &c. There are several species of the poplar, all valuable for medicine, but that with tags is considered best.

The bark of this tree affords one of the finest of bitter tonics. It may be used in powder, decoction, or tincture, for diarrhœa, obstructions of the urine, indigestion, faintness at the stomach, consumption, and worms. The bark may also be pulverised and compounded with other tonics and used in all cases.

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### PODOPHYLLUM—MAY-APPLE.

THE may-apple, known also by the name of *mandrake*, is an indigenous herbaceous plant, and the only species belonging to the genus. The root is perennial, creeping, usually several feet in length, about one quarter of an inch thick, of a brown color externally, smooth, jointed, and furnished with radicles at the joints. The stem is about a foot high, erect, round, smooth, divided at top into two petioles, and supporting at the fork a solitary one-flowered peduncle.

*Medical properties and uses.*—Podophyllum is an active and certain

cathartic, producing copious liquid discharges without much griping or other unpleasant effect. In some cases it has given rise to nausea and even vomiting, but the same result is occasionally experienced from every active cathartic.

The dose of the powdered root is about twenty grains. An extract is prepared from it possessing all its virtues in a smaller bulk. In minute doses frequently repeated, podophyllum is said to diminish the frequency of the pulse, and to relieve cough; and for these effects is sometimes used in hæmoptysis, catarrh, and other pulmonary affections.

### RHUS GLABRUM—SUMACH.

THE common upland sumach rises to the height of from five to ten feet, producing many long compound leaves which turn red in autumn. The berries are also red when ripe, and are of an agreeable but very sharp acid taste. The bark, leaves, or berries, may be used as medicine, and possess valuable properties, being astringent, tonic, and diuretic. Either the bark, leaves, or berries, may be used in strong decoction, in all cases in which medicines of this class are needed. The berries made into a tea and sweetened, make a pleasant drink for children. The bark of the root is said to be a mild cathartic.

In strangury the sumach is said to promote the discharge of urine, relieving difficulties of the kidneys, and strengthening the urinary organs. The berries and leaves are found equal to nutgalls in dyeing or making ink, giving a deep and permanent black.

### RUMEX CRISPUS—CURLED DOCK, NARROW DOCK, SOUR DOCK, YELLOW DOCK.

Root perennial, spindle-shaped, yellow, with a few fibres. Leaves most radical, very long and narrow, waved and curled on the margin.

The root of this plant is slightly purgative; and both root and seeds are said to have been successfully used in the cure of dysentery. The bruised or pulverised roots made into an ointment or tea is a valuable external application for itch and most other diseases of the skin, using at the same time a decoction internally. The dry root pulverised and steeped, one tea-spoonful to a tea-cup of hot water, is an excellent alterant and corrector of the fluids in all cutaneous affections and various other complaints, particularly for ulcers and scurvy. In the last disease, it is recommended very highly; one case successfully treated with nothing but the decoction of the dock root has fallen under our own notice. Bad ulcers and hard tumors have been removed by the application of the bruised root in poultice.

## SANGUINARIA CANADENSIS—BLOOD-ROOT, RED PUCK- COON, REDROOT.

Root perennial, horizontal, fleshy, throwing out a few fibres, reddish outside, emitting, when fresh and broken, a bright red juice. Leaves few, roundish or heart-shaped, upper side a light green, under side almost white, only one on a stalk. Flowers white, supported on separate stalks, putting forth very early in the spring before the leaves are near grown. Grows in rich woodlands, along roads, and in fields around stumps.

It is said the Indians highly esteem this article for its medicinal properties; and it has also acquired considerable celebrity amongst the whites. We, however, think it a rather unsafe medicine applied internally, except in small quantities combined with other articles to modify its action. The powdered root, in doses of fifteen or twenty grains, is a powerful emetic, but it ought not to be administered in this way.

The blood-root is used as an expectorant in coughs and inflammations of the lungs; and for croup it is, by some, deemed a sovereign remedy. For this complaint, a strong infusion may be given in table-spoonful, or less doses, according to the age of the patient. Infused in vinegar, the blood-root is an excellent application to tetter or ring-worm; and the powder applied to fungous or proud flesh, removes it. It has also cured polypus of the nose, when used as a snuff.

## TRILLIUM LATRIFOLIUM—BIRTH-ROOT, BETH-ROOT, JEWSHARP, INDIAN BALM, &c.

THERE are several species of this valuable family of plants, all, or nearly all, of which may be used indiscriminately for the same purposes, and have the same general appearance.

Roots perennial, oblong, thick and short, somewhat resembling the wild turnip, wrinkled, giving out many small fibres. Stem smooth, erect, from four to eight inches high. Leaves three, in a whorl at the top of the stem; and one terminal flower rising above the leaves; color white, red, purple, and sometimes mixed.

The birth-root is astringent, tonic, styptic, pectoral, and antiseptic.—Useful in all kinds of hæmorrhage, immoderate menstruation, asthma, catarrhal cough, diarrhœa, dysentery, &c. The pulverised root may be given in tea-spoonful doses, or it may be steeped, one ounce to the pint, and given in full doses; or the root may be combined with other astringents or bitters.

Externally the root is beneficial in poultice applied to tumors, bad or putrid ulcers, and mortification. The leaves are also said to be useful applied to tumors. In all excessive female evacuations, the birth-root is one of our most valuable articles, and is likewise highly esteemed by the



Indians for the same purposes. They also use it to cure the bites of rattle-snakes. Dies red with alum.

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### ULMAS ASPERA—SLIPPERY ELM, RED ELM.

THE bark of the red elm is an article of much importance in the practice of medicine, and particularly in medical surgery. Infused in water, it affords an abundant mucilage, which is useful in dysentery, coughs, pleurisies, quinsies, &c. A very good way of preparing the bark for internal use, is to pulverise it finely, mix an equal quantity of sugar with it, and add warm water enough to form into a soft pulpy mucilage.

But the most valuable purpose to which the red elm can probably be applied is to the making of poultices, for all kinds of ulcers, inflammations, &c.

## COMPOUNDS.

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*A list of some of the principal compounds, used in the vegetable practice.*

### COMPOSITION POWDERS.

Take bayberry bark one pound, hemlock bark eight ounces, cayenne pepper two ounces, ginger two pounds, pleurisy root one pound, and cloves two ounces; mix them together and they are fit for use. A teaspoonful is a medium dose.

These powders may be given in all cases and stages of diseases to which men, women, and children are subject. They answer the general purposes of an alterative to establish perspiration, equalize circulation, and remove obstructions, from cold or other causes.

Poplar bark is a useful ingredient in the above, where a tonic is required.

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### ANOTHER FORMULA.

*Diaphoretic or sweating powder.*—Take of butterfly root one pound, bayberry, bark of the root, one pound, sassafras, bark of the root, and pleurisy root, each four ounces, ginger one pound, cloves and cayenne, each two ounces. All finely pulverised, and sifted through a fine sieve and well mixed.

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### ANOTHER FORMULA.

The following prescription is very often used, being more simple but not so valuable as the foregoing:

Take of bayberry two pounds, hemlock bark and ginger each one pound, cayenne and cloves each two pounds.

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### ANOTHER FORMULA.

Take of African capsicum one ounce, cloves two ounces, ginger root (pared,) bayberry (bark of the root,) pleurisy (butterfly) root, hemlock (inner bark,) and sumach leaves, each four ounces. All to be finely pulverised, sifted, and thoroughly mixed.

## ANOTHER FORMULA.

Take of bayberry three pounds, ginger and caraway seeds each two pounds, cloves eight ounces, sassafras (bark of the root) and cayenne each four ounces. All finely pulverised, sifted, and well mixed. *Dose*—one tea-spoonful.

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## ANOTHER FORMULA.

Take of bayberry one pound, hemlock bark eight ounces, witch-hazel leaves four ounces, ginger eight ounces, cayenne four ounces, and cloves two ounces. All finely pulverised, sifted, and well mixed. *Dose*—one tea-spoonful.

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## SPICE BITTERS.

Golden-seal, nerve powder, bayberry, unicorn, xantoxylum, cloves, cinnamon, equal parts, four ounces; cayenne pepper two ounces, white sugar four pounds. All finely pulverised and mixed. *Dose*, a tea-spoonful in a suitable quantity of either cold or hot water.

This compound is generally used where a tonic effect is required; hence its exhibition in all dyspeptic habits, and where there is a loss of appetite, or any embarrassed condition of the digestive functions.

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## FEMALE BITTERS.

Unicorn, golden-seal, poplar bark, ginger, gum myrrh, cloves and bayberry, equal parts, eight ounces, cayenne two ounces, white sugar three pounds—mixed. *Dose*, a tea-spoonful every four hours.

These powders are particularly serviceable to females laboring under any chronic affection of the generative organs, which deranges at the same time the healthy tone and action of the stomach and bowels.

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## COUGH POWDER.

Take of wild turnip, boneset, lobelia leaves, elecampane, nerve powder, each one ounce, horehound and skunk cabbage, each two ounces, blood-root one half ounce, mix thoroughly. *Dose* for an adult, a tea-spoonful; for a child, a proportionate quantity.

## NEUTRALIZING MIXTURE, OR PHYSIC.

Take of rhubarb (pulverised,) sal æratus (pulverised, and peppermint plant (pulverised) each two scruples. Add half a pint of boiling water, sweeten with loaf sugar, and add a table-spoonful of brandy. Dose—One or two table-spoonful every quarter, half, or one or two hours, according to symptoms. This is one of the most valuable preparations known for cholera morbus, cholera infantum, or summer complaint of children, diarrhœa, dysentery, &c. Its operation and action appear to be a specific, or almost infallable.

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 ANTHELMINTICS.

By this term is meant those medicines which expel, or otherwise destroy intestinal worms.

The Carolina pink root has long been regarded a favorite article for this purpose; an infusion or decoction should be used. It should not be permitted to steep more than fifteen minutes, as its strength becomes diminished; nor should any more be prepared at a time than is immediately required.

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 WORM SYRUP.

Poplar bark one pound, skunk cabbage, unicorn, ginger, equal parts, one half ounce, butternut bark two ounces; boil in two gallons of water to two quarts, and add a half gallon of molasses, and one half ounce of the oil of wintergreen, which should first be put to a pint of alcohol.—Dose, from a tea to a table-spoonful according to circumstances.

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 ANOTHER FORMULA.

Take of turpentine, castor oil, anodyne drops, anti-spasmodic drops, each equal parts. Mix. Shake before using. Dose, for a child five years old, one large tea-spoonful every hour until it operates mildly as a purge. Then followed by bitter tonics.

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 ANOTHER FORMULA.

Take of skunk cabbage balls, white wood bark, Indian hemp root, each one ounce. All pulverised fine and mixed. Dose, from half to a whole tea-spoonful, in molasses, three mornings in succession, before eating.



## ANOTHER FORMULA.

Take of castor oil (best quality) one ounce, wormseed oil one half drachm, annise oil, and tincture of myrrh, each one drachm. Mix, and warm it to the temperature of milk, which is necessary in order that the ingredients may become fully incorporated. Dose, for an adult, one large tea-spoonful once an hour, for three hours each day, for three days. For children, in proportion, according to age.

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## ANOTHER FORMULA.

Take of spearmint one half ounce, hot water one pint. Infuse fifteen minutes and strain. This tea is said to be one of the most powerful vermifuges in the vegetable kingdom. Those who have children that are subject to an excess of worms in the alimentary canal, will find the importance of the use of this tea, with other anthelmintic medicines. It is also strongly diuretic, and diminishes fever and inflammation, by promoting a discharge of urine. Dose, one table-spoonful every two hours, for a child about one year old.

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## ANTI-EMETIC DROPS.

Take of table salt three ounces, African cayenne one ounce, vinegar, best quality, one quart. Mix and bottle for use. Dose, one table-spoonful, or less, once in from fifteen to thirty minutes, according to the urgency of the symptoms.

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## ANOTHER FORMULA.

Take of the bruised herb, a sufficient quantity, or essence of spearmint; brandy and loaf sugar enough to make palatable. Taken at pleasure.

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## ANOTHER FORMULA.

Take of Lady's slipper three pounds, ginger root and cinnamon four ounces each, annise seed eight ounces, nutmeg one ounce and a half, alcohol six quarts. Pulverise the solid articles, put them into the alcohol, digest ten days in a hot sun heat, often shaking. Then strain, or filter. Dose, from one to three tea-spoonsful, once in fifteen or twenty minutes until the vomiting stops.

## COMPOUND TINCTURE OF MYRRH.

Take of best myrrh twelve ounces, capsicum. balsam of fir, nutmeg, one ounce each, and brandy one gallon. The solid articles all to be finely pulverised, and infused in the brandy for ten days, in a hot sun heat, and often shaken, when it may be strained or filtered. This is a powerful antiseptic, and is highly valuable to wash and cleanse old foul ulcers, which are obstinate to heal.

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## ANOTHER FORMULA.

Take of myrrh twelve ounces, capsicum one ounce, peach or cherry kernels two ounces, brandy, alcohol, or highwines, one gallon. Pulverise the myrrh and capsicum, and digest ten days in a hot sun heat, strain or filter.

For internal use in cases of dysentery, or mortification, either of the above tinctures are best made with brandy; but for external use and for internal application in common cases, the alcohol or highwines, as they are much cheaper than brandy, will answer the purpose very well.—The simple tincture of myrrh is a very valuable family medicine; useful for worms, pains in the stomach, colic, headache, &c. Dose, from one to four tea-spoonsful, or even more.

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## TINCTURE OF LOBELIA SEEDS,

Is made by digesting four and a half ounces of pulverised lobelia seeds in a pint of alcohol, for ten days, in a hot sun heat, often shaking it; then strain or filter.

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## TINCTURE OF CAYENNE,

Is made by digesting four and a half ounces of the best cayenne, finely pulverised, in a pint of alcohol, in the same manner as for the tincture of lobelia seeds.

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## ANTISPASMODIC TINCTURE.

Take of tincture of lobelia seeds, and tincture of cayenne, one pint each, and niervine tincture three gills. Mix, and bottle for use. Dose, from half a tea-spoonful to a table-spoonful, repeated according to circumstances. This tincture is used not only in cases of fits, spasms, &c., but in all violent attacks of disease, and in cases of suspended anima-

tion from drowning, hanging, by lightning, or any other cause whatever. It also operates as a speedy emetic, and shou'd therefore be used in all cases of the accidental or criminal introduction of poisonous substances into the stomach.

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### COMPOUND ANTISPASMODIC TINCTURE.

Take of cloves and nutmeg, each one ounce and a half, ginger root, cinnamon, and annise seed, each one pound, valerian root three pounds, and alcohol one gallon and a half. All the solid articles to be finely pulverised, and digested ten days, in a hot sun heat, then filtered through paper. Dose, from one to three tea-spoonsful. Useful in all spasmodic or nervous affections.

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### ASTRINGENT TONIC COMPOUNDS.

The astringent tonics are peculiarly adapted to the treatment of diarrhœa, dysentery, and all cases of looseness of the bowels. They are likewise the proper remedies for canker, ulcers, floodings and hæmorrhages of every description, for all relaxed states of the system, and profuse evacuations of almost every kind.

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### ASTRINGENT TONICS.

Take of birth-root, pleurisy-root, bayberry, and hemlock, equal parts. All finely pulverised and well mixed. One ounce of this powder to be steeped in one and a half pints of water. Dose, half a tea-cupful, with from half to a whole tea-spoonful of cayenne in it, sweetened if most agreeable. A dose of this tea may be taken three times a day in ordinary cases, but in diarrhœa, dysentery, floodings, &c., the doses should be more frequent.

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### CHERRY CORDIAL.

Take of the bark of the roots of wild cherry tree, and poplar bark, equal parts, and make a strong tea, by moderate steeping. Strain off, and add to each gallon of the tea four pounds of sugar, (loaf sugar is the best,) four ounces of finely pulverised meats or kernels of peach stones, and two quarts of good brandy. Dose, half a wine-glassful, several times a day.

This is a most valuable astringent tonic, useful in all cases of obstinate diarrhœa and dysentery. It also combines the properties of a bitter,

but the astringent by far predominates, and is so powerful as to need using with care.

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### BLACKBERRY SYRUP.

Take two pounds of the bark of the root, well cleansed or washed; add a suitable quantity of water, then boil two hours. Pour off the liquid; then add more water; and thus continue to boil and pour off, until all the strength is extracted; then strain and add the boilings together. Simmer to two quarts; strain; then add four pounds of loaf sugar, and when cool, add half a pint of best French brandy.

Dose, a table-spoonful three times a day, fasting. If it does not arrest the disease after taking it a few days, gradually increase the dose, as the stomach can bear it.

This is a very valuable syrup in bowel complaints, particularly the chronic form. It will effect a cure when every other means fail. It appears to possess specific virtues, different from every other vegetable.

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### SYRUP FOR THE DYSENTERY.

Rhubarb and wild cherry tree bark, a handful; four table-spoonful of sugar; simmer awhile.

Dose, a table-spoonful every fifteen minutes, until the pain ceases.—Make it fresh every day, and add a little brandy.

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### BATHING DROPS.

These are stimulating washes, for applying to painful parts, tumors, swellings, &c., and are very useful. They should generally be applied with much friction or rubbing.

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### BATHING DROPS.

Take of tincture of myrrh one gallon, buds of balm of Gilead, one pint, camphor two ounces. Pulverise the buds and add them, with the camphor, to the tincture of myrrh; digest for ten days, and strain or filter. Useful for bruises, pains in the back, rheumatism, &c.



## ANOTHER FORMULA.

Take of myrrh one ounce and a half, oil of hemlock one ounce, cayenne one ounce and a half, and alcohol two quarts.

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## ANOTHER FORMULA.

Take of compound tincture of myrrh one ounce, oil of hemlock, and oil of sassafras each one-half ounce. Mix. Oil of fir, and cedar, is also sometimes added.

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## BITTER TONIC.

Take of poplar bark, golden-seal, bayberry, and Colombo root, each one pound, capsicum and cloves, each six ounces, and loaf or lump sugar four pounds and twelve ounces, being a quantity equal to all the other articles. All to be finely pulverised, sifted, and well mixed. Dose, one tea-spoonful in either hot or cold water.

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## SPICE BITTERS.—ANOTHER FORMULA.

Take of poplar bark, bayberry, and golden-seal, each one pound, cayenne and cloves, each four ounces, and loaf or lump sugar, in quantity equal to all the other articles. The whole finely pulverised, sifted and well mixed.

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## WINE BITTERS

May be made, by putting two ounces of either of the above compounds, into a quart of wine. To be taken in small doses, three or four times a day.

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## ANOTHER FORMULA.

Take of golden-seal, white wood bark, and bitter-root, each one ounce, and cayenne pepper one half ounce. Pulverise all and add two quarts wine. Dose, from a table-spoonful to a wine-glassful, three times a day. Useful in all cases where bitter tonics are indicated.

## ANOTHER FORMULA.

Take of African cayenne and cloves, each four ounces, cinnamon bark eight ounces, poplar bark, golden-seal, bitter-root, bayberry, pleurisy root, and ginger root, each one pound, sumach leaves, and hemlock bark, each eight ounces, and loaf sugar eight pounds. All made fine, sifted, and well mixed. Dose, a heaping tea-spoonful, in half a gill of boiling water, three times a day. Or, take one ounce of the powder, three gills of gin, or of Lisbon wine, and one gill of water, and two ounces of loaf sugar, mix in a bottle, to be shaken before using.

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## ANOTHER FORMULA.

Take of balmomy leaves, and bitter-root, each eight ounces, barberry bark two ounces, prickly ash berries eight ounces, rhubarb two ounces, caraway seeds one pound, cloves eight ounces, and African cayenne twelve ounces. All finely pulverised, and well mixed. Put one ounce of this powder, and two ounces of brown sugar, into a quart of spirits, shake often for a few days, when it will be fit for use. Dose. two tea-spoonsful in a gill of hot water sweetened. Removes a cold, promotes the appetite, quenches thirst, relieves cough, removes costiveness, and cures colic. For colic and costiveness, the dose must be increased to double the quantity.

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## TONIC CORDIAL.

Take of poplar bark one pound, bayberry and dogwood bark, each eight ounces. All made fine. Water, a sufficient quantity; boiled to two gallons; then strain off, and add of sugar, (loaf is the best,) seven pounds, peach kernels, pulverised, eight ounces, and French brandy one gallon. To be kept closely bottled. Dose, half a wine-glassful, three or four times a day. This is a very valuable tonic compound, partaking of the properties of both bitter and astringent tonics, the bitterness, however, rather predominating. It is a most excellent restorative; useful in all cases, particularly in diarrhœa and dysentery.

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## TONIC EXPECTORANT SYRUP.

This is made exactly as the tonic cordial, with the addition of four ounces of the fresh, or three ounces of the dry rattle-root, and two ounces of the spignard, elecampane, or common horehound. This syrup is an excellent article for coughs, consumptions, and all complaints of the breast.

### CANCER PLASTER.

Take of red clover blossoms, four pounds, and roots, or roots and tops of narrow dock, one pound. Or any larger quantity in the same proportion, boil in water until the strength is out, then separate the clover and dock from the liquor, carefully pressing all the juice from them, and return it again into the kettle, and continue the boiling with the utmost care to prevent burning, until reduced to the consistence of a salve or plaster.

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### SORREL PLASTER OR SALVE.

Take the common sheep sorrel, any quantity, bruise, and press out the juice, place it on plates in the sun, until dried away to a proper consistence for a plaster. This may be applied to the cancer, spread on paper or a piece of bladder made soft, and must occasionally be renewed. If it proves too painful, it may be left off at night, and re-applied in the morning.

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### CANCER BALSAM.

Take of sorrel salve, balsam fir, and salt butter, of each equal quantities. Mix. Applied as the above.

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### DR. S. THOMSON'S CANCER PLASTER.

Take of the heads of red clover sufficient to fill a brass kettle, and boil them in soft water for one hour; then remove these from the kettle, pressing the liquor out from them, and fill the kettle again with fresh heads, which must be boiled in like manner in the same liquor, adding as much more water as may be necessary. After boiling these about an hour, the liquor must be strained off and the clover heads pressed as before to get it all out. Then return it into the kettle and boil or simmer down to the consistence of thick tar. Very great care must be taken in boiling it down to prevent its burning; as by burning, not only the burnt part is destroyed, but the remainder is in some measure deprived of its medical properties.

When used it should be spread upon a piece of bladder, suet skin, thin cloth, or strong paper.

Other formulas for preparing cancer plasters, may be found under the head "*Cancer*."

Oxalic acid conjoined with the above, in the proportion of eight parts of the balsam to one of the acid, (the two ingredients put into wedge-wood mortar, and thoroughly incorporated,) is a valuable adjunct.

[It will be remembered the acid is prepared from sorrel.]

## VEGETABLE CATHARTIC PILLS.

Take of mandrake root six ounces, black-root and blood-root, each four ounces, gamboge eight ounces, lobelia seeds four ounces, and cayenne one-half ounce. All finely pulverised, sifted and well mixed. To form into pills, make a thick mucilage of gum Arabic, peach tree gum, or even slippery elm bark, by dissolving in water, or instead of this take molasses and moisten the powders just so as to make them adhere together. Then form them into pills about the size of a pea, and roll them in fine slippery elm, bayberry, or flour; lay them in a dry place exposed to the air to dry, and when sufficiently dry they may be put into boxes, and have a little fine bayberry or elm mingled with them to prevent their adhering together. Dose, from three to six, taken, in ordinary cases, at bed time; or two thirds may be taken at night, and the remainder in the morning.

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## ANOTHER FORMULA.

Take of mandrake root and gamboge, each eight ounces, blood-root and lobelia seeds, each four ounces. All finely pulverised, sifted, and well mixed; the powder moistened with molasses to a proper consistence for making into pills. In other respects managed as the foregoing. Dose, from two to five.

These pills are useful in diarrhœa, dysentery, rheumatism, jaundice, female obstructions, &c. For chronic complaints enough should be taken to operate as a brisk purge, and then about two a day, and if necessary again repeat the purge.

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## ANOTHER FORMULA.

Take of gamboge and blood-root, each two ounces, lobelia seed one ounce, cayenne pepper, two drachms, rhubarb four drachms, and pearl-ash one drachm. All made fine, sifted, and mixed. Brought to a proper consistence for making into pills by the addition of syrup of buckthorn or butternut. After making, roll them in pulverised golden-seal.

These pills may be used as a puke or purge. Take one every hour till they purge; or take four at once, and they will puke. Take one every hour until the bowels begin to move, then take three, and they will vomit, purge, sweat, and produce a free discharge of urine.

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## ANOTHER FORMULA.

Take of mandrake root one drachm, ginger root, two scruples, plerisy root and bitter-root, each one drachm, and African pepper one scruple. All finely pulverised, sifted, and well mixed. Formed into a mass

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suitable for making into pills, by mixing with honey. Make into pills of a suitable size for swallowing. Dose, three pills, and if they do not operate in six hours, take two more.

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### ANTIBILIOUS POWDER, COMMON PURGATIVE, OR PHYSIC.

Take of jalap, one [pound, Alexandria senna, two pounds, and peppermint plant, one pound. Let these articles be separately pulverised; then mix them together, and pass through a fine sieve. Dose, a tea-spoonful, (about a drachm.) It should be put into a tea-cup, with a lump of loaf sugar, and a gill of boiling water added; and given to the patient when cool, fasting, or on an empty stomach.

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### DR. HULL'S GENUINE BILIOUS PHYSIC.

Take eight ounces of aloes; one ounce, each, of mace, myrrh, cinnamon, cloves, saffron, and ginger; four ounces of the dried leaves of the garden sunflower, or of the wild sunflower. Pulverise the articles separately, and mix them thoroughly. Dose, a tea-spoonful.

The efficacy of this celebrated physic in the cure of bilious colic, is well known.

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### ANTIDYSENTERIC POWDERS.

Take of African cayenne three ounces, ginger root, bayberry, pleurisy root, hemlock, sumach leaves, witch-hazel leaves, red raspberry leaves, golden-seal, valerian root, and annise seeds, each four ounces.—All made fine, sifted, and thoroughly mixed. Dose, a heaping tea-spoonful, in a gill of boiling water, drank as hot as can be borne. Or if the patient cannot readily take it in substance, one ounce of the powder may be steeped in a pint of hot water, taken in doses of a gill, and when the liquor is used up, fill up again, and use as before.

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### ANODYNE POWDERS.

Take of African cayenne one-half ounce, ginger root, cinnamon bark, sumach leaves, witch-hazel leaves, red raspberry leaves, valerian root, and fresh annise seeds, each four ounces. All finely pulverised, sifted, and well mixed.

These powders are good for all menstrual derangements in the female system, for bearing down pains, and affections of the kidneys, bladder, or womb.

## NO. SIX, OR HOT DROPS.

Take of myrrh twelve ounces, cayenne pepper one ounce and a half, alcohol one gallon. The solid articlee to be pulverised, and digested in the alcohol, in a hot sun heat for ten days, often shaking it, then strained or filtered. Dose, from one to three tea-spoonsful, at discretion. Good to relieve pain and promote perspiration.

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## DIURETICS BEER.

Take of elderberry juice, two pounds, pure honey eight ounces, and yeast two ounces. Let it ferment or work clear, then add of tincture of juniper berries, and essence of wintergreen, each two ounces. Mix, and it is fit for use.

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## DIURETIC CORDIAL.

Take of water melon seeds, featherfew, yellow parilla root, burdock root, and horse radish root, each one pound, golden-seal, parsley root, and agrimony, each eight ounces. All bruised and boiled in five gallons of water down to four, then strain and add twelve pounds of good sugar and two gallons of brandy. Dose, half a wine-glassful once or twice a day.

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## HYDRAGOGUE TINCTURE.

Take of bark of sweet elder, one pound, good wine one gallon.—Let it simmer an hour; strain and bottle. Dose, a wine-glassful, three or four times a day.

This tincture is usefully administered in dropsical affections, particularly in abdominal dropsy, or ascites. It has cured many without any other ingredient.

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## DIURETIC DECOCTION.

Take of queen of the meadow root, milk weed root, juniper berries, dwarf elder bark, spearmint, and wild carrot seed, each two ounces.—Put all into a mortar and bruise. Make a strong decoction. Dose, half a pint, to be taken often through the day.

This decoction is very useful in gravel, dropsy, &c. It is strongly diuretic.

### TINCTURE OF LOBELIA HERB.

Take of the lobelia, fresh gathered, any quantity, bruise in a mortar, and put into an earthen or tin vessel, pressing it down close and firm: then add of proof spirits, sufficient to cover the herb. Stop the vessel close, and let it stand for a day or two, and then strain and press out the liquor from the herb, and to each quart of this tincture, add one ounce of essence of sassafras, and bottle it for use. Dose, from one to ten tea-spoonsful.

This tincture is valuable not only as an emetic, but also as an external application to wounds, bruises, inflammations, ulcers, eruptions of the skin, and poisons of every description.

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### ANOTHER FORMULA.

Take of the tincture of lobelia, made from the dry herb, eight quarts; liquorice paste, half a pound dissolved in warm water and added to the tincture.

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### ANOTHER FORMULA.

This is made by mixing the asthmatic tincture with the tincture of blood-root, which is prepared as follows:

Take of blood-root, bruised, four ounces, hot water one pint. Pour the water on the pulverised roots, digest for two days; and add a pint of proof spirits. Then take of tincture of lobelia, and blood-root tincture, each four gills.

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### SOOT

Is said to be an excellent escharotic, to remove fungus or proud flesh, from wounds and ulcers; and may be substituted for burnt alum, being much better.

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### AROMATIC CORDIALS.

These are pleasant drinks, often very grateful to the sick; any kind of which may be made by observing the following rule:

Take of loaf sugar twelve ounces, essence of peppermint four ounces, gin one pint, and pure water one quart. Dissolve the sugar in the water; then add the essence to the gin, when the whole may be mixed, and well shaken together.

## ESSENCES

Are made by dissolving any of the aromatic oils in alcohol, in the proportion of about three drachms, (three tea-spoonsful,) of the oil to half a pint of alcohol.

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## EXPECTORANTS.

The object of expectorants is to loosen and promote the ejection of mucus, and other fluids, from the throat and lungs. A variety of compounds are employed for this purpose, from amongst which we select the following:

## EXPECTORANT POWDER.

Take of skunk cabbage root, four ounces, unicorn root, two ounces, lobelia seeds, one ounce, and cayenne, one drachm. All finely pulverised, sifted, and well mixed. Dose, from half to a whole tea-spoonful, in honey or molasses, or they may be formed into pills, and taken at bed time.

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## ANOTHER FORMULA.

Take of tincture of lobelia, one pint, anodyne drops, two pints, and antispasmodic drops, one pint. Mix. Dose, half to a whole tea-spoonful, repeated at discretion.

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## ANOTHER FORMULA.

Take of horehound, dry, and caraway seeds, each one pound, sage, dry, liquorice root, sweet, and coltsfoot, roots and tops, each eight ounces, and cayenne pepper, two ounces. Water, a sufficient quantity to boil for two or three hours, and leave, when strained, two gallons. Then add seven pounds of good brown sugar, boil and skim off the froth or scum; when cool add one gallon French brandy, and bottle for use.—Dose, for a child of three or four years old, one tea-spoonful adding the same quantity of water; and for grown persons two or three tea-spoonsful without water, taken several times a day, if the cough is severe.

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## ANOTHER FORMULA.

Take horehound one pound; water, a sufficient quantity, and boil to extract the virtues and reduce to one quart—tincture one pound of balm buds ten days in one gallon of good brandy; then strain and add one gallon of honey and the above extract of horehound, and simmer and skim. Dose, a tea-spoonful or more according to age and circumstances.



## ANOTHER FORMULA.

Take of elecampane, blood-root, pleurisy root, (*asclepias tuberosa*.) wild turnip, sculleap, blue cohosh pipsissawa, nerve powder, each one ounce, lobelia seed, half an ounce, common spirit, one gallon. Tincture ten days—dose, a tea-spoonful or more. This and the above preparation may be united, equal parts, and where an expectorant is required, its virtues can scarcely be surpassed.

## ONION SYRUP.

Take any quantity of onions, and roast them in the fire; peel off the outside, press the juice all out, and sweeten with honey, molasses, or sugar. If prepared in much quantity, a little spirit must be added to preserve it. This is an excellent article for colds, coughs, croup, and all complaints of the lungs. Dose, from one tea-spoonful to a table-spoonful, according to age, &c.

## VEGETABLE EXPECTORANT SYRUP.

Take of onions, fresh from the garden, sixteen pounds, spignet root, fresh dug, eight pounds, horehound, four pounds, lobelia, pleurisy root, and skunk cabbage root, each two pounds, and water, five gallons. Boil in an iron vessel down to two gallons; then strain and simmer over coals to one gallon; then add two pounds of honey, one pint of vinegar, and one pint of gin, and simmer down to two quarts. Dose, one table-spoonful every fifteen minutes, till relief is obtained.

## HONEY SYRUP.

Take a handful each, of horehound, spignard, (or spignet,) roots, elecampane roots, and garden beets, boil in a sufficient quantity of water to extract the virtues of the articles; then strain, and when cool add honey enough to make a good syrup. Take in small doses several times a day. Useful for consumptions, and coughs.

## PULMONARY BALSAM.

Take of spikenard root, horehound tops, elecampane root, and comfrey root, each one pound and a half. Add a suitable quantity of water.—Boil, and pour off the infusion repeatedly, until the strength is all extracted; then strain, and reduce the whole of the liquid down to about twelve

porter bottles (or six quarts;) then add of white sugar twelve pounds, and good honey six pounds; clarify it with the whites of eggs. Let it stand twenty-four hours, in order that it may settle; add one quart of spirits, and finally bottle it for use. Dose, a wine-glassful, three or four times a day.

This preparation is highly useful in the treatment of pulmonary affections, and coughs of long standing.

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## OINTMENTS, AND LINIMENTS.

Ointments differ from salves in being of a softer consistence; both are applied externally—salves most commonly to ulcers, and ointments to bad humors, and other eruptions of the skin. Liniments are somewhat thinner in their consistence than ointments, and are employed in frictions or embrocations on the skin.

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### FORMULA.—NERVE OINTMENT.

Take of Mayweed flowers, two ounces, smartweed and bitter archangel, each one ounce, bittersweet, (bark of the root,) three ounces, wormwood, two ounces, and cayenne pepper, one-fourth of an ounce. Bruise the herbs and bark, and simmer all the ingredients in a sufficient quantity of any soft animal oil, over a slow fire, five or six hours—then strain the liquid, and add to it one and a half ounces of spirits of turpentine to each pound of liquid. It should be bottled close from the air.

This ointment is to be used in cases of bruises, sprains, swellings, tumors, &c., by rubbing it frequently on the affected parts, and binding it up with flannel, to keep it from the air.

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### DR. S. THOMSON'S NERVE OINTMENT.

Take of the bark of the root of bittersweet, two parts; of wormwood and chamomile, each equal, one part, when green, or if dry moisten it with hot water. Put these into any kind of soft animal oil and simmer them over a slow fire for twelve hours; then strain, and add one ounce of the spirits of turpentine to each pound of ointment. To be used for sprains.

## GREEN OINTMENT.

Take of tanzy, wormwood, horehound, catnip, and hops, of each, an equal quantity. Bruise them and put them into a kettle, cover over with spirits and lard, and let it stand two weeks; then simmer awhile and strain. Add one pound of common white turpentine to every ten pounds of the ointment. This ointment is very cooling, resolvent, relaxing, and emollient.

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## RELAXING OINTMENT.

Take equal parts of plantain leaves and roots, bittersweet bark, and spignard root, boil out the strength, strain, and make it into an ointment with hog's lard. This is a valuable ointment. It softens and relieves a caked and inflamed breast, in a remarkable manner.

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## OINTMENT FOR SCALDS, OR BURNS.

Take of spirits of turpentine one ounce, and olive oil or lard two ounces. Mix. Apply this ointment to a scald or burn, and it takes out the fire and removes the inflammation.

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## LINIMENT FOR BURNS.

Take equal parts of sweet oil, of fresh drawn linseed oil, and limewater; shake them well together, so as to form a liniment. This is found to be an exceedingly proper application for recent scalds or burns.

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## VOLATILE LINIMENT.

Take of sweet oil an ounce, spirits of hartshorn half an ounce; shake them together. It is said that in the inflammatory quinsy, a piece of flannel moistened with this liniment, and applied to the throat, to be renewed every four or five hours, is one of the most efficacious remedies, and seldom fails to carry off the complaint.

## MISCELLANEOUS RECIPES.

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Take of the extract of dandelion one-third, the other two-thirds, equal parts, of lobelia seeds, golden-seal, cayenne, and bitter-root; make into a common sized pill. Dose, two may be taken at a time, three times per day. This form of pill possesses great merit in chronic affections of the liver.

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Take of the sulphate of quinine twenty grains, golden-seal two ounces, bitter root one half ounce, water sixteen table-spoonsful, the essence of spearmint, or sassfras to suit the taste. This compound should be put into a bottle and shaken well together. This preparation is almost a sovereign remedy for the chills and fever, and should be given in table-spoonful doses every two hours between the paroxysms of the disease; the bottle to be well shaken before each dose. The following tests are subjoined in relation to the purity of quinine, for the benefit of purchasers; as it is obvious that the pure article is implied in the above prescription.

*“On the adulteration of the sulphate of quinine.”*—The recent rise in the price of sulphate of quinine has induced many unprincipled venders of drugs to adulterate it with various ingredients; to such an extent, indeed, has this been carried, in some instances, that not more than a fifth part of what was sold as sulphate of quinine really consisted of that substance. M. Vallet found that the substance chiefly used for the adulteration of the sulphate of quinine was Mannite, a substance similar in external appearance to the sulphate of quinine, but destitute of all the valuable properties for which quinine is so justly celebrated. He found, however, that the adulteration could be with great ease detected by means of pure alcohol, which dissolves the quinine alone, but leaves untouched the mannite, which, however, is freely soluble in water and of its characteristic sweet taste.

M. Dubail has also arrived at the same conclusions as M. Vallet, and, in pursuing his investigations, met with one sample of sulphate of quinine, which, though presenting all the external characters of the genuine unadulterated drug, both as regarded its lightness and silky appearance, did not contain above a sixth part of its weight of sulphate of quinine. The rest was composed of mannite, insoluble in alcohol, but soluble in water, and of a sweet taste.

M. Pelletier has found that that which is sold in sealed packages, with the impress of his own seal, has also been subjected to adulteration, but the substance used in this instance, is gypsum. The same test, however, viz: the solubility of alcohol, applies to this case, so that every druggist would do well to apply this simple test to the samples of this drug before purchasing.”



*Compound syrup of sarsaparilla.*—Take of sarsaparilla, pipsissawa, (princispine,) guaiacum (commonly called gum guiac,) yellow dock, burdock, (the roots,) each two pounds—boil in water sufficient to cover it, four hours—then strain and reduce to two and a half gallons, and add an equal quantity of molasses, and one ounce of the oil of wintergreen, which should first be put to one half pint of alcohol. The use of this syrup possesses great merit; and should be given in all cases where a gradual alterative is required. Hence its utility in scrofulous habits, general debility of the system, occasioned by the venereal, and in all cutaneous diseases. Dose, from two-thirds to a full wine-glass three times per day.

It may be remembered here, once for all, that syrups should never be heated after the molasses are added—and they should never be added until the liquor is perfectly cold; otherwise they will sour. An equal quantity of molasses will always preserve syrup liquor from fomentation, if the parts are combined when cold and kept so.

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*Tooth wash.*—Chloride of soda, tincture of bayberry, and tincture of myrrh, equal parts, one ounce; essence of sassafras to suit the taste. Dilute with water, ten or twelve parts, and use with a brush.

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*Stomach bitters.*—Take of balmomy two ounces, poplar bark two ounces, bayberry bark two ounces, boneset two ounces, bugle one ounce; pulverise; add boiling water one gallon, spirits two quarts.

These bitters are very valuable in bilious habits, dyspepsia, and loss of appetite; in the last of which they are superior to all others.

Dose, a wine-glassful two or three times a day.

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*Wine bitters.*—Take of golden-seal two ounces, white-wood bark two ounces, bitter-sweet two ounces, cayenne pepper one ounce, wine two gallons.

Dose, from a spoonful to a wine-glassful.

These bitters are a very good tonic for dyspepsia, debility, &c.

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*Compound bitters.*—Take of wild cherry bark one pound, tumeric bark two pounds, prickly ash bark one pound, seneca snake root one pound, tanzy four ounces, socotrine aloes three ounces; pulverise; to four ounces of the mixture add three pints boiling water, and two quarts of gin.

These bitters are valuable for dyspepsia, obstructed menses, and other diseases where tonics are required.

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*Spice bitters.*—Take of allspice two ounces, prickly ash berries, or bark, two ounces, golden-seal two ounces, poplar bark two ounces, gentian, or bitter-root, two ounces, boneset two ounces, spirits one gallon, or wine two gallons.

These bitters form a valuable tonic for general debility, female weaknesses, relaxed habits, low state of the blood, &c.

*Eye waters.*—Eye waters are prepared from vegetable or mineral substances, added to spirits, or water, and applied in form of a wash.—They should be applied very weak, and the strength increased gradually.

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*Compound eye water.*—Take of bayberry bark, raspberry leaves, witch-hazel leaves, and lobelia herb, equal parts; make a strong infusion.

This eye water is used in all cases of sore or weak eyes.

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*Vegetable eye water.*—Take red willow; make a strong infusion; a little brandy may be added.

This forms a valuable application for the eyes, particularly in cases of inflammation.

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*Mucilaginous eye water.*—Take the pith of sassafras shrubs; infuse in cold water; add rose-water. This forms a cooling wash for the eyes.

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*Welch Medicamentum.*—Take of aloes four ounces, rhubarb four ounces, ginger one pound, brown sugar two pounds, spirits one gallon, essence of peppermint one ounce; put the whole together; shake it occasionally for two or three days.

Dose, a table-spoonful for an adult; for a child a tea-spoonful.

This very valuable compound is used in costiveness, indigestion, loss of appetite, bilious complaints, worms in children, &c.

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*Opodeldoc.*—Take of alcohol one quart, Windsor soap eight ounces, camphor two ounces, oil of rosemary one eighth of an ounce; any other aromatic oil may be used.

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*Scorbutic wash.*—Take of spirits one pint, blood-root one ounce, dragon's claw one ounce, lobelia one ounce; mix and shake well together.

This forms a valuable application for affections of the skin, particularly of the face; it will remove pimples and other eruptions in a short time.

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*Compound tincture of lobelia.*—Take of lobelia seed, pulverised, two ounces, cayenne pepper two ounces, valerian half an ounce, vegetable elixir one pint; put the whole into a bottle, and shake it occasionally.

This preparation is used for all sudden attacks of diseases, such as spasms, fits, lock-jaw, and poisons; and all cases where a quick emetic is required. This is called third preparation, &c.

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*Emetic pill.*—Take of lobelia seed, pulverised, one ounce, cayenne pepper one ounce, extract of butternut two ounces; roll them in flour.

These pills are valuable in chronic diseases, such as affections of the liver, spleen, &c. The extract of lobelia may be used instead of the seed.

Dose, from one to three on going to bed, every night.

*Detergent powder.*—Take of bayberry bark, hemlock bark, white lily root, witch-hazel bark, or leaves, red raspberry leaves, and blue scabish, equal parts; pulverise.

This powder is useful to remove canker, and may be used for that in varied forms. The infusion forms an excellent wash for sores of every kind, sore mouth, &c.

# GLOSSARY.

## A.

Abdomen, the belly, or paunch.  
Abscess, a collection of matter.  
Adiposc, fat.  
Anasarcaous, dropsical.  
Anthelmintic, having the power of destroying worms.  
Antispasmodics, medicines that allay spasms or cramps.  
Aperients, medicines that gently opens the bowels.  
Aphthæ, small superficial ulcers in the mouth.  
Apyrexia, the period of intermission of fevers.  
Ardor urinæ, a scalding of urine.  
Arthritis, rheumatic pains of the joints.  
Asphixia, apparent death, suspended animation.  
Asthenia, diminished vital energy,

## B.

Bronchia, the air tubes in the lungs.  
Bronchotomy, an incision in the wind pipe.

## C.

Cachexia, a general weak, relaxed, and disordered state, without fever.  
Canthus, angle of the eye.  
Capillary vessels—Capillaries, the very minute vessels, between the arteries and veins.  
Cardia, the upper orifice of the stomach.  
Cardiac region, the pit of the stomach.  
Carotids, the arteries that convey the blood to the head.  
Catamenia, the monthly discharge of females.  
Cataplasm, a poultice.  
Cephalic relating to the head.  
Cerebral, relating to the brain.  
Cerebrum, the brain.  
Cervix uteri, neck of the uterus.  
Chyle, the milky fluid produced by digestion.  
Chyme, the food after it has undergone the progress of digestion in the stomach, and has passed into the bowels.  
Colliquative stools, profuse watery discharges from the bowels.  
Coma, profound lethargic stupor, or sleep.  
Comatose, morbidly sleepy.  
Congestion, the accumulation of blood in a part.  
Constipation, costiveness.

## D.

Dejections, alvine evacuations by the bowels.  
Deliquium, fainting.  
Demulcents, soothing, mucilaginous fluids, as flaxseed tea.

Dentition, teething.  
Desquamation, scaling off, or separation of the skin in small scales.  
Diagnosis, the distinguishing marks of particular diseases.  
Diaphoresis, gentle perspiration.  
Diaphragm, the muscular partition between the chest and abdomen.  
Diathesis, any particular disposition or habit of the body.  
Dietetic, relating to the regulation of the diet.  
Diluents, bland drinks.  
Diuresis, increased discharge of urine.  
Diuretics, medicines that increase the flow of urine.  
Duodenum, the first twelve inches of the small intestines.  
Dyspnoea, oppressed breathing.  
Dysuria, difficulty and pain in passing urine.

## E.

Ejections, discharges from the stomach by vomiting.  
Electuary, a compound medicine, made into consistence of honey.  
Emesis, vomiting.  
Emetic, a medicine that causes vomiting.  
Emulsion, a milk-like fluid, formed by mixing oily and resinous substances, by means of mucilage, with water.  
Encephalic, relating to the cavity of the skull.  
Encephalon, the brain with its membranes.  
Endemic, a disease peculiar, or especially prevalent, in certain localities or districts.  
Enema, a clyster, injection; enemata, injections.  
Engorgement, an accumulation and stagnation of fluid in a part.  
Enuresia, involuntarily discharge of urine.  
Epidernis, the outer skin.  
Epispastics, substances that blister the skin, as Spanish flies.  
Epistaxis, bleeding from the nose.  
Errhines, substances used to produce sneezing.  
Erysipelas, St. Anthony's fire.  
Erythema, a slight inflammation of the skin.  
Eschar, the dead substance produced by applying caustic, &c.  
Etiology, relating to the causes and origin of diseases.  
Exacerbation, the period of increase of a fever.  
Exanthemata, acute eruptive diseases.  
Excitability, the capacity of being excited by stimuli.  
Excitement, the action caused by stimuli.  
Exfoliate, to cast, or scale off, as the skin, or a piece of dead bone.



Expectorants, medicines that promote spitting.

Exsanguinous, bloodless, with but little blood.

## F.

Farinaceous, made of meal.

Fascia, a tendinous expansion.

Fauces, the posterior part of the mouth, or top of the throat.

Febrile, that which causes fever.

Febrifuge, a medicine that has the power of arresting the progress of an intermitting fever; as bark.

Febrile, feverish.

Fistula, a deep tube-like ulcer.

Foramen, an opening, or hole.

Frænum, bridle.

Function, the action or office performed by an organ.

## G.

Ganglion, a small knot or roundish enlargement of a nerve, or tendon.

Gangrene, mortification.

Gastralgia, pains in the stomach without fever.

Gastric, relating to the stomach.

Gastritis, inflammation of the stomach.

Gastro-enteritis, inflammation of the stomach and bowels.

Gestation, riding in a carriage, or any locomotion without boldly exertion.

Gustatory, relating to the taste.

## H.

Hæmatemesis, vomiting of blood.

Hæmaturia, voiding bloody urine.

Hæmoptysis, bleeding from the lungs.

Hæmorrhage, bleeding from any part of the body.

Hæmorrhoids, piles.

Hectic, a slow habitual fever, with sweats and emaciation.

Hemicrania, pain on one side of the head.

Hemiplegia, palsy on one side.

Hepatisation, change of structure so as to resemble the substance of the liver.

Hernia, a rupture.

Herpetic, having the character of a tetter.

Humoral, relating to the fluids, particularly the blood.

Hydragogue, a purge that produces watery stools.

Hydrocephalus, dropsy in the head.

Hydropic, dropsical.

## I.

Icteric, yellow, jaundice-like.

Icterus, jaundice.

Idiopathic, original affection of a part.

Idiosyncrasy, any peculiar habit.

Ileum, the lower part of the small intestines.

Iliac regions, the flanks, the lateral and lower parts of the abdomen.

Impetigo, a species of ringworm.

Integuments, the skin.

Irritability, the capacity of being excited into action.

Ischuria, difficulty or stoppage of urine.

## L.

Lactation, the act of suckling.

Lateritious, like brick-dust, brick-colored.

Leucophlegmatic, a pale, relaxed, debilitated, and torpid state of the body.

Leucorrhæa, the whites.

Liniment, a very thin ointment.

Lithiasis, a disposition to discharge gravelly matter with the urine.

Lithontriptic, a remedy used for dissolving stones in the kidneys or bladder.

Lumbago, rheumatism in the loins.

Lymphatics, vessels that carry white fluids.

## M.

Malaria, pestiferous exhalations from marshes and putrifying substances.

Meninges, the coverings of the brain.

Meningitis, inflammation of the coverings of the brain.

Metastasis, a translation of a disease from one part to another.

Miasm, the same as malaria.

Morbific, capable of causing diseases.

## N.

Narcotic, medicines, that blunt the sensibility of the nerves.

Nephritic, affections of the kidneys.

Neuralgia, painful affections of a nerve.

Normal, natural, healthy.

Nosology, a systematic arrangement, explanation and definition of the diseases.

## O.

Œdema, swelling from a dropsical collection in the cellular membrane.

Œsophagus, the gullet.

Olfactory, relating to the sense of swelling.

Ophthalmia, inflammation of the eyes.

Opiate, a medicine whose prominent ingredient is opium.

Organic affection, a disease in which more or less of the substance of a part is changed or disordered.

Orthopnoea, great difficulty in breathing.

Ossified, changed into a bony structure.

Os uteri, mouth of the womb.

## P.

Paracentesis, making an opening into the cavity of the abdomen or chest to give exit to fluids; tapping.

Paralysis, palsy.

Parenchyma, the proper substance of organs.

Pathognomonic, characteristic symptoms.

Pathology, doctrine of the causes and nature of diseases. Lately this term has been, applied not very properly, to the diseased appearances discovered on dissection.

Pectoral, relating to the breast.

Pectoriloquism, a peculiar sound in the lungs when the patient speaks, heard through the sides of the chest by the stethoscope.

Percussion, striking the breast with the extremities of the fingers to ascertain the kind of sound produced.

- Pericardium, the membranous sack surrounding the heart.
- Peristaltic motion, the vermicular motion by which the bowels push forwards their contents.
- Pharmaceutic, relating to the compounding, &c. of medicines.
- Pharynx, the top of the gullet.
- Phlegmasia, inflammation.
- Phlegmonous, inflammatory.
- Phlogosis, superficial inflammation.
- Phymosis, contraction of the foreskin, so as to prevent it being drawn back.
- Plethora, fulness of blood.
- Pleuritic, of the character of pleurisy, attended with pain in the side of the chest.
- Post mortem, after death.
- Prolapsus, a falling down.
- Prostate gland, a gland situated at the neck of the bladder.
- Ptyalism, salivation.
- Pulmonary, relating to the lungs.
- Puruloid, resembling pus or matter.
- Pus, the yellowish thick fluid or matter formed by inflammation.
- Pylorus, the lower orifice of the stomach.
- Pyrexia, fever.
- Pyrosis, water-brash, or the heart-burn.
- Q.
- Quartan, a periodical disease returning every 72 hours.
- Quotidian, daily; an ague that returns daily.
- R.
- Rachialgia, colic, with costiveness and vomiting.
- Rachitis, rickets.
- Renal, relating to the kidneys.
- Rete mucosum, the mucous-like expansion immediately under the skin, and in which coloring matter, that constitutes the color of the surface, is deposited.
- Rubefacients, external applications that inflame the skin.
- S.
- Sanguiferous, conveying the blood.
- Sanguineous, bloody, relating to the blood.
- Scirrhus, a hard, degenerated, tumefaction of the gland.
- Sebaceous, suet-like matter.
- Secretion, the separation of a fluid or substance from the blood, by the action of a living organ.
- Secretory, vessels, or organs, that separate a peculiar fluid or substance from the blood.
- Sedatives, medicines that diminish the actions of the system.
- Sensorium, the brain, the centre of feeling.
- Scrous, watery.
- Strumous, scrofulous.
- Subsultus tendinum, a convulsive, sudden twitching of the sinews.
- Somnomatic, the consequence of some other affection.
- Syncope, fainting.
- Synochal, fever of a highly inflammatory character.
- T.
- Tarsus the edge of the eyelid.
- Tenesmus, an ineffectual and painful urging to go to stool.
- Therapeutic, relating to the employment of remedies.
- Thoracic, belonging to the chest.
- Thorax, the chest.
- Tormina, griping pain.
- Tubercles, small, hard tumors, resembling cheese in their internal structure.
- Type, the peculiar form assumed by a fever as to the period intervening between its paroxysms or exacerbations.
- Typhoid, resembling typhus fever.
- U.
- Ureters, the tubes which convey the urine from the kidneys of the bladder.
- Urethra, the canal of the penis, through which the urine is discharged.
- Utero-gestation, the term of pregnancy.
- Uterus, the womb.
- V.
- Vaccina, cow-pox.
- Vertigo, dizziness.
- Vesication, blistering.

### ERRATA.

Errors of a typographical character, it has been said; are almost unavoidable where a press is working day and night to expedite urgent purposes; this is the only apology that is deemed necessary for such commissions as well as omissions that may be pointed at, by the cynical malcontent, in this work.

On page 536, a paragraph appears in which a very genteel *blister* is applied to a lady's *supposed* sore leg. The botanic practitioner may smile at the absurdity of the *error* even, and then take his choice in remedies, when we inform him that the entire paragraph was a wrong quotation.

On page 607, third formula, last line, the word *pounds* occurs, instead of *ounces*.

Again, on page 168, it is said, rheumatic pains are aggravated by external heat, whereas the reverse is the truth.





